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USAWC CORONARY RISK AND FITNESS ANALYSIS

by

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USAWC MILITARY STUDIES PROGRAM PAPER

USAWC CORONARY RISK AND FITNESS ANALYSIS

STUDY PROJECT

by

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4 June 1980

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This study describes the need to intensify efforts to conserve the Army's experienced personnel resources through meaningful evaluations and fitness programs for soldiers of every age, rank and job specialty. It provides a detailed discussion of the primary risk factors associated with Coronary Heart Disease. Aerobic training is emphasized as one of the most effective ways to improve cardiorespiratory fitness. Information on medical evaluations and determinations of fitness levels are included. Clinical procedures and screening techniques used with voluntary participants of the AWC Class of 1980 are discussed, and then followed by the study conclusion, recommendations and comments from the participants.

PREFACE

This study project was initiated over the concern for the need to intensify efforts to conserve experienced personnel resources and to emphasize medical evaluations and meaningful fitness programs for soldiers of every age, rank, and job specialty. The author applied a basic background in physical education, extensive staff and recent troop command experience with an interest in emphasizing the need to train an Army to be fit to fight. The study could not have been completed without the enthusiastic response from the AWC Class of 1980, and outstanding support and interest of the Commander, Laboratory and Family Practice staff of Dunham Army Health Clinic. Cpt (P) Donald W. Shuler, M.D. and Cpt Donald J. Kasperik, M.D. are complimented for their exceptional contributions to the Coronary Risk screening effort. Maj. Richard Smerz, D.O., deserves special recognition for organizing clinical operations, performing student assessments and for providing a study analysis and conclusions.

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CHAPTER I

INTRODUCTION

The need for a high level of fitness for military forces has been recognized throughout the history of man. Basic survival of nations has depended on it! This aspect becomes even more important today with constrained personnel resources and an absence of a responsive mobilization base. If our armed forces are to "fight outnumbered and win", they must be physically fine tuned to be prepared to best a potential adversary that has numerical superiority. It is the fitness, will power, determination and mental poise constituting general health and well being that enables the individual soldier to gain confidence, presence, strength, stamina and endurance that will carry him through the hour of danger.[1] On the other hand, units that lack the endurance and stamina developed from long and vigorous exercise may suffer extreme combat losses.

BACKGROUND

The Army has developed an extensive program to monitor and evaluate unit readiness. Personnel readiness of a unit is reviewed in terms of numbers and training. Fitness is included in the latter and is reported on the basis of a semi-annual or annual Physical Training Test. For some individuals and even units, this may be the only organized fitness effort during the year. Official policy "requires that every officer and soldier, regardless of age or duty assignment, engage in an effective physical con-

ditioning program on a continuing and progressive basis," and "responsibility for maintaining a satisfactory level of fitness is shared by each officer/soldier and his or her commanding officer." [2]

STATEMENT OF THE PROBLEM

Contrary to policy, once the average soldier leaves basic training he often loses the motivation to maintain an acceptable level of fitness because he feels it unnecessary, or a lack of unit emphasis diminishes the authoritarian motivational force. The emphasis, then, must come from the commander and in many cases, the fitness of a unit is a direct reflection of the commander, his personal fitness and overall attitude. There are also instances where fitness training is supported in units, but on the "do as I say" not "do as I do" principle: some units have fitness programs for the troops with officers and NCOs conveniently "disappearing" when it comes time for physical training. There are also many major staff elements throughout the Army where fitness is given lip service or a rear seat to the rationalization of a lack of facilities, time, operational priorities or plain disinterest.

The lack of motivation or interest by senior officers and NCOs may well stem from a policy exempting personnel over 40 from taking physical fitness tests. Although these personnel are required to participate in a physical fitness program and maintain a level of fitness enabling them to perform in combat, it is generally accepted that the 40th birthday means no more physical training or, at the most, "individual programs". In many instances it is the senior officers/NCOs who use the crutch of 40 years, time and priorities to slack off when, indeed, these are

the very persons in greatest need of the effects of a good fitness program.

There should be special concern for the soldier over 40, his fitness state and the risk factors having an influence on his potential for continued service. Nearly one million people die annually in the United States from diseases of the cardiovascular system -- over 630,000 deaths from heart attack, making this the number one health hazard in the country.[3] The Surgeon General indicates that diseases of the circulatory system (heart, atherosclerosis, stroke) accounted for 5.5 percent of all disability separations in CY78 and 6.3 percent in CY79. These same diseases resulted in 9.14 percent of all active duty deaths in CY78 and 11.3 percent in CY79. (Incl 1) This not only represents a drain on manpower but a tremendous loss in trained and experienced resources that are difficult to replace. The alarming fact is that these people are in the prime of their lives and are in their maximum contributory years.

In addition to a general decrease in activity for those over 40 and the risks associated with cardiovascular disease, a third factor bears consideration: Army medical practice/policy. The Army medical system is designed primarily to diagnose and treat disease, and for the most part, there is relatively little done in the area of prevention. The physical exam system is perfunctory in nature, looks for deviations in medical standards and offers the patient little, if any, feedback on the state of his/her health. Policy changes during the last few years have eliminated the annual requirement for physical exams, and personnel on active duty undergo periodic examinations during the anniversary months of their birthday years 19, 23, 27, 31, 35, 39, 41, 43, 45, 47, 49 and annually thereafter.[4]

Aviators have eye, audiometric and electrocardiographic tests annually with full physicals every other year till age 35 and annually thereafter. It is interesting to note two points pertaining to aviator personnel: air traffic controllers (ground-based personnel) are required by the FAA to have annual exams regardless of age, whereas Army pilots receive bi-annual exams. Also, the electrocardiographic test is necessary and performs a vital service; however, it shows the condition of the heart at rest. This in no way simulates the stress and increased heart rate that aviators face during conduct of flying duties.

The push for fitness and people readiness must come from and be demonstrated by the very top echelons of the Army and filter through every level of command if we are to maximize the fitness potential of the Army. The Army must take a hard look at current programs and consider new methods of evaluating fitness levels; it must educate, increase awareness and motivate soldiers to meet high standards of personal fitness. Concentrations of these programs should relate to the essential cardio-respiratory, muscular strength and endurance, and flexibility exercises necessary to prepare all soldiers, regardless of rank or age, to meet the demanding requirements of their profession. The Army needs to follow the example set by industry and establish a corporate fitness element to coordinate the entire effort of medical assessment, policy and program development to monitor and evaluate individual and unit fitness readiness.

INVESTIGATIVE PROCEDURES

For the reasons previously stated--fitness programs for personnel over 40, cardiovascular health hazards, and Army medical practice, it was decided to conduct a study of Coronary Risk

Factors and their effect on the Class of 1980 at the Army War College. The primary purposes of this study were to increase cardiac risk awareness, promote wholesome health attitudes and to determine acceptance and future use of screening techniques at the Army War College and potential for Army-wide application. This was accomplished by utilizing personnel and facilities of the Dunham Army Health Clinic to perform a fitness and risk analysis of voluntary participants. A follow-up questionnaire provided feedback to determine the value of the program.

ORGANIZATION OF THE PAPER

This study begins with a detailed discussion of the primary risk factors associated with coronary heart disease that were used in the risk screening process. Aerobic training is emphasized as one of the most effective ways to improve cardiorespiratory fitness. Information on medical evaluations and determination of fitness levels is provided. Clinical procedures and screening techniques are discussed. Then follow the study conclusion and recommendations.

CHAPTER I

FOOTNOTES

1. DA Pam 600-2, The Armed Forces Officer, p. 3.

2. AR 600-9, "The Army Physical Fitness and Weight Control Program", p. 2-1.

3. American Heart Association, "Reduce Your Risk of Heart Attack", p. 11.

4. AR 40-501, "Standards of Medical Fitness", C31, p. 10-9.

CHAPTER II

CORONARY RISK FACTORS

The coronary risk factors used in this study are those generally accepted as the primary causes of cardiovascular disease, and can also be used as predictors of general fitness.

Cholesterol includes high and low density lipoproteins associated with coronary heart disease. HDL Cholesterol (HDL), a high density lipoprotein particle carrying cholesterol in the blood stream, is considered good cholesterol since it has the ability to pick up cholesterol from the artery walls and carry it to the liver for possible excretion. Low density cholesterol (LDL) tends to stick to the artery walls and often results in the buildup of fatty plaque, obstructions of the coronary arteries and ultimately it increases the risk of stroke or heart attack.

Although total cholesterol in amounts exceeding 200-250 mg% is important in predicting coronary risk, research indicates levels of HDL and LDL and ratio of HDL to total cholesterol are infinitely more significant. Dr. Wood and associates of the Stanford Heart Disease Prevention Program compared the lipoprotein patterns of sedentary and active men 35-39 years old. The active group of joggers who averaged at least 15 miles per week exhibited a significantly lower level of LDL and elevated level of HDL.[1] In an article published in the New England Journal of Medicine a group of investigators from the Baylor College of Medicine studied the dietary and exercise habits of runners and

non-runners in the Houston area. They concluded that there is an increase in HDL irrespective of dietary intake, and that it is primarily the jogging and running, rather than diet, that elevates HDL to a level associated with a significant reduction of coronary risk in a population that is unsupervised with regard to activity and diet.[2]

Dr. Kenneth Cooper recently stated that "nearly all of the epidemological investigators agree that a high HDL level is probably the most important factor in determining whether coronary artery disease will occur." In more recent studies Dr. Cooper has noted that the ratio of total cholesterol to HDL has taken on significant importance. He feels that the total cholesterol-HDL ratio may be more important than total or HDL. Dr. Cooper feels that the ratio of total cholesterol must be less than 5 and preferably less than 4.5.[3]

Dr. Eugene Gaston also indicates that the lower the ratio of total cholesterol to HDL the less the risk of coronary disease, and that 5 is the standard risk and 3.4 half the standard risk for men, with the average male coronary heart disease victim having a total to HDL ratio of 5:4.[4]

Although there are human variations, most studies conclude increased activity will shift cholesterol from the dangerous LDL to the favorable HDL. LDL is related primarily to dietary intake of cholesterol containing foods and food high in saturated fats, whereas HDL is related to activity levels. Corrective action, therefore, for high total cholesterol and LDL can be achieved by weight loss, diet restrictions and in extreme circumstances, medication. For most people low HDL can be elevated through increased activity of 11-15 miles of running per week. So a combination of aerobic training and diet modification may prevent the development of atherosclerosis and heart disease.

Just as cholesterol, triglycerides seem to be related to diet, body weight and activity levels. These blood fats are closely related to obesity and the intake of starches and carbohydrates, and, therefore, require a concerted effort to modify the diet to bring the levels to acceptable limits. Weight reduction, reduction of saturated fat, alcohol, starches and refined sugars will help to reduce high triglyceride levels.

Numerous glucose studies indicate that a chronically raised level of sugar in the blood may result in diabetes, which is associated with a rise in fatty substances in the blood, and with the development of atherosclerosis, and thereby an increased incidence of heart attack.[5] High sugar levels can be controlled with diet, weight control, exercise and medication.

Body Fat causes excess weight associated with heart disease, diabetes and hypertension. Fat is nothing but pure dead weight; it over-insulates the body and increases the risk of heat exhaustion and heat stroke; it lowers the body's efficient use of oxygen and reduces an individual's capacity for work (stamina and endurance). A man who has more than 20 percent body fat and a woman who has more than 30 percent body fat are considered by most authorities as obese.[6]

Scale weight alone is not a good indicator of fitness, as it is possible for persons who have poorly developed muscles to be underweight and still be obese. This is also true of most people as they grow older. The combination of lower activity levels plus loss of metabolically active cells results in a decrease of lean muscle mass with a corresponding increase in percentage of body fat. Body fat, then, not scale weight, is the clue to fitness--and age is no excuse. By far the most widely used technique for body density (fat) determination involves skinfold measurements with a body caliper. A caliper works on

the principle that fat is stored under the skin. The more fat in the body, the thicker the layer of fat under the skin.

Exercise physiologists and physicians generally agree that a fat level of 15-19 percent of body weight is ideal for men while 22-27 percent is the ideal for women.[7] Standards at the Aerobics Center in Dallas, Texas, require males to be 19 percent fat or less and females to be 22 percent fat or less.[8]

Regardless of the rationalization employed, overweight/obesity are problems of energy balance--too many calories with too few used. Most of the research substantiates that regular physical exercise has a favorable effect on body composition for individuals of all ages--greater amounts of lean tissue and less body fat than the average non-active person of comparable age. Weight reduction on a short-term basis by the use of exercise alone is not very successful, because so much work is required to mobilize body fat. When diet is held constant over a period of time, weight reduction can occur as a result of exercise.[9] Effective weight reduction is very simple and depends on achieving a negative caloric balance--using more calories than are taken in.

High Blood Pressure, or hypertension, increases the workload on the heart and has been associated with a greater incidence of heart disease, stroke or kidney failure.[10] High blood pressure is generally recognized as one of the three major risk factors along with cigarette smoking and cholesterol. When combined with these risks and conditions of obesity or diabetes, the risk of heart attack or stroke is multiplied several times. Most researchers feel that blood pressures under 140/90 are normal. Anything above that is considered abnormal, and anything above 160/95 is hypertension that should be treated.[11] Dr. George Sheehan, a noted cardiologist, states that "hypertension is an indication of a susceptable individual living in a stressful situation who is unable to cope."[12]

There is a wide range of treatment for hypertension, but basically the patient must realize that his problem could concern his life style and genetic susceptabilities. One way to deal with hypertension is to eliminate the stress and/or increase the ability to cope by making changes in life style. The elimination of salt is another possibility and when obesity is involved, weight reduction could help. There have been several studies that show beneficial effect of exercise. Medication should be considered only as a last resort.

The World Health Organization has stated that smoking is the largest preventable cause of ill health in the world. Numerous studies show that cigarette smokers suffer excessive mortality rates by increasing the risks of cancer, pneumonia, emphysema and atherosclerosis. Smoking increases the risk of heart attack 3 to 10 times and causes a 20 percent greater incidence of stroke. A recent study by White and Froeb of 2100 middle-aged subjects at the University of California San Diego found that persons who do not smoke suffer some lung damage from constant, long-term exposure to tobacco smoke. The study concluded that chronic exposure to tobacco smoke in the work environment is deleterious to the non-smoker and significantly reduces small-airways function.[13]

Stress is nothing more or less than the rigors of life, which, as they are encountered, necessitate speeding up the metabolic processes of the body.[14] Hans Selye defines stress as "the nonspecific response of the body to any demand upon it . . . intense biochemical reactions and readjustments without regard to the nature of the stress causing event."[15]

Stress is considered an essential element of life and represents our reactions to the challenges of dealing with both pleasurable and unpleasant experiences. However, one effect of

stress over a long period of time can be distress, which is associated with difficult problems including tension, insecurity and frustration.[16] Stress has been linked to almost every disease in the medical dictionary including low-grade pressure on heart and blood vessels that could lead to stroke and heart disease. Response to stress involves the mobilization of the body's defenses. This resistance is best described by Selyes General Adaptation Syndrome, which consists of alarm, resistance and exhaustion states.[17] The alarm reaction occurs when a stressor is recognized and biochemical resources mobilized; resistance involves the application of vital resources to resist or adapt to the stressor; exhaustion occurs when adaptive resistance can no longer overcome the stressor. Stress, therefore, becomes dangerous when it is unduly prolonged.[18]

Stress is an occupational hazard to the Army officer who faces a "short suspense--cando" job environment and continual changes or concern over assignment, promotion, school selection, and relocation. Also, to varying degrees, this individual is predisposed to be a Type A personality with its associated dangers. It isn't necessary to consciously try to avoid all stress, but one must recognize the presence of continuous harmful stress and learn to cope with it. One should also seek outlets providing passive (meditation, biofeedback, progressive relaxation, music or a good book) or active response (yoga, jogging, aerobic dancing, tennis, or racquetball). Some authorities feel that competitive activities continue stress and should be avoided, especially by the Type A personality. This may be true if carried to excess; however, the benefits of the exercise and mental relaxation from the rigors of the job far outweigh any negative aspects. The key issue is not how much stress or what kind, but how well one can mobilize to deal with the challenges.[19]

Cardiorespiratory or Aerobic Fitness is the keystone in attaining and maintaining optimal levels of fitness. It involves conditioning of the heart, lungs and circulatory system and is indicative of the ability of the body to adapt and recover from periods of physical stress. It describes how well oxygen is taken from the air into the lungs and blood, pumped to working muscles where it is utilized in the cells to oxidize carbohydrate and fat to produce energy.[20] In studies conducted on police, it was determined that a high state of cardiorespiratory fitness resulted in a more efficient performance of duty, reduced probability of heart disease and less frequent on and off duty injury.[21] For years physical activity has been limited to reducing the risk of coronary disease. It has been over a quarter century that J.H. Morris and others compared heart attack rates of drivers and conductors on London's double-decker buses and clerks and mail carriers in the city's postal system. The conductors suffered only half as many heart attacks as the more sedentary drivers and the mail carriers had significantly fewer heart attacks than the clerks.[22]

Similar studies have been performed with equal results on San Francisco longshoremen, Harvard graduates and residents of Framingham, Massachusetts. Dr. Ralph S. Paffenberger, Jr., an epidemologist at the Stanford School of Medicine studied the histories of some 17,000 subjects. He concluded that men who regularly engaged in strenuous activities (jogging, swimming) had fewer heart attacks than those who were less active. Those who expended fewer than 2000 calories per week in physical activity had a 64 percent higher risk of heart attack.[23]

Dr. Thomas J. Bassler of the American Medical Joggers Association, who has run more than 66 marathons and has done over 3000 autopsies, believes that anyone who jogs an hour a day six days a week will become immune to heart disease. There is, of

course, much controvery within the medical establishment concerning activity and "immunity" from heart disease. It is generally conceded, however, that valuable changes in important physiological processes can result through vigorous aerobic activity (running, swimming, cycling). Some of these benefits include the following:

- increased heart stroke volume
- decreased blood pressure
- lowered resting heart rate
- increased elasticity of the arteries
- increased high density lipoproteins
- lowered triglyceride levels
- increase in the number of red blood cells
- increase in stamina and endurance
- weight control

Dr. Paul Kiell feels that "endurance type activities will build collateral circulation around the heart and throughout the body, and at the same time keep undiseased blood vessels soft and pliable."[24]

It has also been established that aerobic exercise is the most beneficial activity for improving the cardiovascular system. Aerobic exercise occurs in the presence of oxygen. Conversely, anerobic exercise involves intense effort of short duration, leading to rapid production of lactic acid, carbon dioxide and oxygen debt. Anerobic exercise involves high intensity, is often done in spurts and poses a greater burden on the heart and circulatory system. Aerobic exercise is relatively comfortable and can be sustained for long durations. According to Brian J. Sharkey, heart rates during or immediately after exercise below 120 characterize low intensity aerobic effort; rates between 120 and 160 indicate moderate intensity, and rates between 160 and 180 indicate high intensity aerobic effect. (Values depend on age and fitness level.)[25]

CHAPTER II

FOOTNOTES

1. Brian Sharkey, Physiology of Fitness, p. 126.

2. G. Hartung, et al., "Relation of Diet to High-Density-Lipoprotein Cholesterol in Middle-Aged Marathon Runners, Joggers and Inactive Men", The New England Journal of Medicine, 14 Feb 1980, pp. 357-360.

3. Kenneth Cooper, "How Good Is The Good HDL Cholesterol?" Aerobics, April 1980, p. 2.

4. E. Gaston, "Bicycling, Cholesterol and Your Heart", Health and Fitness, March 1980, pp. 15-19.

5. American Heart Association, "Reduce Your Risk of Heart Attack", p. 9.

6. Sharkey, p. 109.

7. T. Pipes and P. Vodak, The Pipes Fitness Test and Prescription, p. 43.

8. Kenneth Cooper, The Aerobics Way, p. 142.

9. David H. Clarke, Exercise Physiology, pp. 124-126.

10. American Heart Association, p. 10.

11. Kenneth Cooper, The Aerobics Way, p. 30.

12. George Sheehan, Medical Advice to Runners, p. 47.

13. H.F. Froeb and J.R. White, "Small-Airways Dysfunction in Non Smokers Chronically Exposed to Tobacco Smoke", New England Journal of Medicine, 27 Mar 1980, p. 720.

14. K. Rodahl, Be Fit For Life, p. 15.

15. H. Selye, Stress Without Distress, p. 111.

16. D.B. Ardell, High Level Wellness, p. 145.

17. P. Goldberg, Executive Health, p. 140.

18. H. Selye, 115.

19. J.A. Levenson, "Stress Need Not Be Hazardous To Your Health", American Man, Spring 1980, p. 50.

20. Sharkey, p. 12.

21. M. Pollock, et al., "Analysis of Physical Fitness and Coronary Heart Disease Risk of Dallas Area Police Officers", Journal of Occupational Medicine, June 1978, pp. 393-398.

22. Goldberg, p. 137.

23. James F. Fixx, Second Book of Running, pp. 20-27.

24. Paul Kiell, Keep Your Heart Running, p. 34.

25. Sharkey, pp. 10-20.

CHAPTER III

AEROBIC FITNESS TRAINING

It is widely accepted that two primary targets for improving fitness and general well being are the cardiorespiratory system and body composition; both are well within direct control of the individual to modify through sensible programs of activity and diet. Aerobic conditioning is the most effective method of improving cardiorespiratory fitness and can contribute to improvements in body composition. Many aerobic type activities are available. Those that use the large muscle groups, can be sustained for continuous periods and are rhythmical in nature are considered acceptable -- eg., running, jogging, cycling, swimming, skating, cross country skiing, rowing and rope skipping.

Seven medical experts were asked by the President's Council on Physical Fitness to judge overall fitness value of popular forms of exercise on the basis of how much they help cardiorespiratory endurance, muscular endurance, muscular strength, flexibility, balance and general well being. Running, bicycling, swimming and handball/squash received the highest ratings.[1] Consumers Guide and its consultants in medicine, physical fitness and health studied all the standard and popular exercise programs and concluded that running is the best form of exercise contributing to the heart and pulmonary systems.[2] Running has the additional advantages of application under almost any circumstance with minimum preparation, equipment, facilities and time involved to achieve desired results.

Facilities and variety also play an important part in promoting fitness. A fitness trail with an exercise circuit patterned after European Parcours can be designed to improve the aerobic and muscular fitness of soldiers. The fitness trail should be constructed in pleasant surroundings along a jogging path of 1/4 mile with 7 dual purpose exercise stations.[3] Distance loops can be added to provide for longer runs. The fitness trail can be used individually or with groups. It offers versatility for aerobic training and strength and flexibility exercises that can be accomplished in one session or varied with special emphasis on a particular area.

There are many excellent programs available using the activities previously mentioned, and all contain segments of the following elements:

- determination of individual levels of fitness and target training zones
- frequency, intensity and duration of training
- warm-up and cool-down periods

CHAPTER III

FOOTNOTES

1. James F. Fixx, The Complete Book of Running, p. 2.

2. The Editors of Consumers Guide, The Running Book, p. 52.

3. U.S. Department of Agriculture, Forest Service, Equipment Development Center, Ft. Missoula, Missoula, Montana 59801.

CHAPTER IV

MEDICAL SCREENING AND DETERMINATION OF FITNESS LEVELS

The American College of Sports Medicine (ACSM) and most other authorities agree that persons 35 years of age and older should have a medical evaluation prior to any major increases in exercise habits. They also advise that persons above the age of 35 and those under 35 who are high risk or symptomatic take an ECG monitored exercise test under the supervision of a physician according to one of the following two protocols:[1]

- If the participant is 35 years of age or older, or regardless of age, has major risk factors or documented coronary heart disease but is asymptomatic, the graded exercise test may be administered by an exercise technician with a physician available in the test area.
- If the participant, regardless of age, is symptomatic with suspected or documented coronary heart disease, the graded exercise test may be administered by a physician or by an exercise technician with the physician in visual contact with the subject as he performs the test.

The ECG monitored stress test is a very sensitive and remarkably accurate diagnostic tool, and when handled properly, represents the most advanced method in the medical profession for pre-exercise tests to diagnose or rule out possible heart disease, determine fitness levels and set reasonable exercise limits. The current limited availability of qualified health personnel, facilities and equipment in relation to the volume of evaluations makes extensive use of maximal stress testing virtually impossible.

SUBMAXIMAL STRESS TESTS

"While a maximal Treadmill Stress Test (TST) is required for diagnosis and/or evaluation of early coronary artery disease, a non-diagnostic submaximal TST might provide a much safer, reliable, objective age-corrected means of evaluating aerobic conditioning or physical fitness without the need for physician supervision provided certain guidelines are observed by the person administering the test. For example, the degree of aerobic conditioning could easily be directly correlated with the time required to achieve a safe, less than maximal heart rate such as 70 to 85 percent of maximum predicted heart rate (MPHR) based on age. The test would then be terminated once this rate was achieved and a score could be given based on the length of the test completed. The test would automatically be terminated prior to achieving 70 to 85 percent of MPHR if the subject developed ECG changes, ectopic beats, fatigue, or upon satisfactory completion of the minimal length of testing required for a "passing" score, thereby avoiding maximal stress in all participants."

"This would thus provide a safe, objective, age-adjusted measurement for aerobic conditioning without undue risk and would prevent over-exertion in an unconditioned individual. The test could be easily administered by a nurse or corpsman following a brief training period and would not require a physician in attendance. An additional benefit would be the possible early diagnosis of coronary artery disease in individuals experiencing chest pain or ECG changes who would be referred for complete evaluation by a physician."[2]

Maximal stress testing could complement the submaximal test and fitness screening through selective use for those cases where high risk factors indicate need for treatment before activity levels are increased.

1.5 MILE RUN FIELD TEST

This test requires a maximal effort and should only be attempted after medical authorities determine that individual activity levels and the absence of coronary risk factors will ensure a sufficient measure of safety. This test also is a valid predictor of cardiorespiratory fitness.[3] It is most suitable for active individuals and lends itself well to group testing with minimum equipment. A simplified scoring method has been established by Brian Sharkey of the University of Montana Human Performance Laboratory. It converts time and distance to maximum oxygen uptake (VO_2max) that can be effectively used to establish pulse ranges (training heart rate) for aerobic exercise.[4]

A simplified method of calculating training heart rate developed by Karvonen is first to determine predicted maximum heart rate, which is 220 minus age. From this figure subtract resting pulse rate and multiply by the estimated level of fitness on a scale of low (70%), medium (80%) and high (90%). When this is determined, add the resting pulse rate and the result will provide a training heart rate that should be sustained for periods of 20 minutes or more when performing aerobic exercise. There are many charts available that are pre-calculated for age, sex and minimum optimum and maximum training heart rates.[5]

An individual can easily check to see if the intensity of his exercise is within his training heart rate by stopping during exercise and immediately taking his pulse (wrist or throat) for 10 seconds and multiplying by 6 to get the pulse rate per minute (training heart rate).

Frequency, duration and intensity are the key factors in developing the quantity and quality of cardiorespiratory fitness. The ACSM makes the following recommendations for effective aerobic training:[6]

Frequency of training: 3-5 days per week
Intensity of training: 60%-90% of maximum heart rate or 50%-85% of maximum oxygen uptake (VO_2max)
Duration of training: 15-60 minutes of continuous aerobic activity.

ENDURANCE TRAINING BENEFITS

An aerobic program conducted under the framework described above can yield positive changes in cardiorespiratory fitness (VO_2max) and total body composition (body fat and lean muscle mass.) The following observations of the ACSM have been derived from studies conducted with endurance training programs:[7]

- The improvement in VO_2max is directly related to frequency, intensity and duration of training with improvements ranging from 5% to 25% depending on initial level, quality and quantity of training.
- Improvement in VO_2max tends to level when frequency of training is increased above 3 days per week.
- Programs conducted at least 3 days per week with at least 20 minute duration and an intensity to expend approximately 300 calories per session will reduce total body mass and body fat while maintaining or increasing lean body weight.
- The minimal threshold level for improvement in VO_2max is approximately 60% of the maximum heart rate.
- Similar improvement can be expected for activities performed at lower intensity, longer duration compared to higher intensity, shorter duration if the total energy costs of the activities are equal.
- Exercise must be conducted on a regular basis in order to maintain the training effect.

- Elderly participants need longer periods of time to adapt to training; however, age in itself does not appear to be a deterrent to endurance training. Although VO_2max decreases with age, evidence suggests that this trend can be altered with endurance training.

In summary, aerobic exercise performed at least 3 days or more per week, 20 minutes or more per session at or above the target heart rate will yield the greatest benefit in terms of cardiorespiratory fitness and desirable body composition. This of course assumes maintenance of a sensible, well-balanced diet.

CHAPTER IV

FOOTNOTES

1. Lea and Febiger, "Guidelines for Graded Exercise Testing and Exercise Prescription", p. 7.

2. Martin U.S. Army Hospital, Ft. Benning, GA., Department of Internal Medicine, Ltr. May 1980, by Roswell, R.H., "Submaximal Treadmill Stress Testing As A Means of Evaluating Physical Fitness in Active Duty Personnel Over Age Forty".

3. Kenneth Cooper, The Aerobics Way, p. 282.

4. Sharkey, pp. 38-40.

5. James F. Fixx, The Complete Book of Running, p. 39.

6. American College of Sports Medicine, "The Recommended Quantity and Quality of Exercise for Developing and Maintaining Fitness in Healthy Adults", Journal of Physical Education and Recreation, 18 May 1980, p. 17.

7. Ibid., p. 18.

CHAPTER V

CORONARY RISK SCREENING PROTOCOL

A two-phased fitness evaluation and coronary risk screening of voluntary participants of the Class of 1980 and staff and faculty were conducted during the period 19 March to 7 May 1980. (Incl 2) There were 197 participants, including 170 students (75% of the Class of 1980), 6 International Fellows and 27 faculty and staff members. Participants ranged in age from 29-59 years (ave. 41) with the majority in the 40-49 category. (Incl 3)

The fitness/screening process included a comprehensive laboratory analysis of coronary risk factors and a detailed medical consultation with a staff physician. The Aerobics International Research Society/Cooper Clinic coronary risk screening model was adapted for use, and included the latest medical information available. Some risk standards were adjusted to reflect the high level of fitness and low risk desired of military personnel expected to exhibit stamina, endurance and continuous availability during the most critical and demanding of circumstances.

Each participant was required to fast for 8-12 hours prior to a blood sample collected for high density lipoproteins (HDL), low density lipoproteins (LDL), triglycerides and glucose determination. Approximately one week following this visit, the participants were scheduled for a 45 minute session with a physician who reviewed personal and family medical history and performed a physical examination with emphasis on the cardiovascular system. This evaluation included blood pressure determination, percent body fat measurement and resting ECG.

The personal and family history were designed to elicit information regarding occurrences of heart attack and/or heart

disease either in the participant himself or his immediate family, i.e., mother, father, sibling. In addition, information was obtained regarding smoking habits, tension-anxiety states and current levels of exercise. The information regarding current levels of exercise was converted from activity levels described by each participant into aerobics points standards utilizing charts from Dr. Kenneth Cooper's books New Aerobics and Aerobics Way.[1]

Blood pressure measurements were taken at rest with subjects in the sitting position. The procedure used to predict percentage of body fat was adapted from equations developed by A.S. Jackson and M.L. Pollock.[2] Skinfold fat was measured with a Lange skinfold fat caliper, manufactured by Cambridge Scientific Industries, Cambridge, Maryland. Measurements in milimeters were taken at three sites: (1) the pectoral fold at the anterior axillary line, (2) abdominal fold taken lateral to the umbilicus, (3) anterior thigh fold taken midway between the hip and knee.

Utilizing the values in the following formulas allowed for the determination of the percent body fat for each participant:
X_2=sum of chest, abdomen, and thigh folds; X_3= age

Body density (BD) = $1.1093800 - 0.0008267 (X_2) + 0.0000016 (X_2)^2 - 0.0002574 (X_3)$.

Percent Fat = $\frac{(4.95)}{BD} - 4.5 \times 100$.

A resting 12 lead ECG was performed on each participant. The Aerobics Institute/Cooper Clinic protocol specifies the use of a maximal stress ECG utilizing a treadmill. The equipment and facilities were not available at the AWC to perform a treadmill stress ECG. The submaximal methods of obtaining an exercise stress test are not as consistently reliable as the treadmill results.

The 1.5 mile run test was substituted for the Balke treadmill test to determine cardiorespiratory fitness (maximum oxygen uptake: VO_2max ml/kg/min). Participants were not allowed to take part in this test until the physician had completed the clinical coronary risk screening and determined that it was reasonably safe for each individual to participate. On site medical service was provided during the periods the run was conducted.

The lab values obtained, the physical parameters, as well as those historical aspects of note were then scored for potential of coronary risk according to the rating scheme of the Cooper Clinic. The total summation of the scores was then used to predict the percent chance for each participant of developing significant symptoms of coronary artery disease within the next five years.

At the conclusion of the examination phase, each participant was presented with a score sheet showing his lab values and testing parameters, along with his risk score. A Coronary Risk Appraisal booklet describing these various parameters and their impact on coronary artery disease was furnished each participant. (Incl 4) Discussion of these factors followed, and each participant was provided ample time to ask questions and receive thorough explanations. Special effort was taken to point out areas where improvement was needed to lower the risk score, and where applicable, treatment was initiated, and/or the participant was referred or rescheduled for further assessment. Diet counseling, advice on exercise, and activity prescriptions were provided as was advice on relaxation techniques. Smokers were advised to quit smoking and appropriate suggestions were offered.

In addition to the Coronary Risk Appraisal, fifty students

volunteered to pilot a Health Self-Appraisal on major factors influencing health including biological, environmental, health care and life style influences. (Incl 5) Preliminary steps were taken to include a health self-appraisal in the total assessment process for the Class of 1981 at the Army War College.

CHAPTER V

FOOTNOTES

1. Kenneth Cooper, The Aerobics Way, p. 131 and The New Aerobics, p. 94.

2. A.S. Jackson and M.L. Pollock, "Generalized Equations for Predicting Body Density of Men", British Journal of Nutrition, 1978, pp. 497-501.

CHAPTER VI

DISCUSSION OF FINDINGS AND CONCLUSIONS

A review of the Coronary Risk Appraisal elements indicates that the average participant is an active 41 year old male with a relatively low probability of developing coronary heart disease. (Incl 6)

Those who completed the 1.5 mile run exhibited excellent aerobic capacity (cardiorespiratory fitness). Although the test resulted in a wide range of scores (18-59 ml/kg/min) that may be characteristic of this age group and profession, it lacked full participation and may be inconclusive. Only 52.3% of the 197 volunteers participated in the run; 31 were below the standard equating to an 8 minute mile run. It is suspected that many of those who took part in the study and did not submit to the run test (94), and those who did not participate in any phase of the study (56) may well be the ones in greatest need of increasing their cardiorespiratory fitness levels. The cholesterol levels of the participants revealed most HDL fractions in the acceptable range (45 mg%). However, 33% of the group did exceed a more acceptable level of 50mg%. Triglyceride and fasting blood sugar levels were very good. The percent of body fat was about 3% over the preferred 19%, but well below the average American who has about 30% body fat. The mean blood pressure of 120.2/76.5 was very good for this age group.

The majority of participants in this study were in generally good physical condition, and of low coronary risk. In fact, 70% did not exceed a greater than 10% risk for develop-

ment of coronary heart disease within the next 5 years. They generally reflected activity levels exceeding the aerobic points recommended for minimum levels of fitness; there was a general absence of hypertension and personal and family history of heart disease, some practice of weight control, and relative abstinence from smoking. For the most part, these individuals still need to concentrate on maintaining or increasing aerobic type activity, improving dietary habits and body composition, and maintaining or increasing the ability to recognize and cope with tension.

This study, however, did more than to confirm the relative well-being of those involved. Thirty percent, or 59 individuals, had a combination of risk factors suggesting the probability of a 40% or greater chance of coronary problems over the next 5 years. There were eight undiagnosed hypertensives identified and two others were found to have abnormal ECGs. All of these individuals were required to have further evaluation and follow-up. There were four others who had equivocal ECGs who were asked to have repeats; they were subsequently found to be normal. Follow-up visits were suggested for three individuals with fasting blood sugars greater than 115mg%, as well as 13 people with triglyceride levels greater than 200mg%. Fifteen participants who exceeded 30% body fat were asked to return for reassessment after 3 months of diet and exercise, as were 32 participants whose ratio of total cholesterol to HDL exceeded 5 to 1.

CONCLUSION

This study has served the Army well. It has provided a data base on the coronary risks of personnel assigned to the

AWC--a group of individuals in whom the Army has invested a great deal, and for whom it is likely to invest a great deal more. It has served as an educational tool by introducing participants to the current philosophies and medical thought regarding coronary artery disease, physical exercise, and health promotion. This insight will prove invaluable to them and those they directly influence as they assume positions of responsibility throughout the services they represent. It has enabled each person to evaluate his fitness against predictable risk factors and will assist him in making conscientious decisions and plans about his life style and approach to fitness. It has served as an effective screening device, detecting a number of potentially significant problems that, hopefully, were discovered in time, with treatment and advice provided to preclude the affected persons from paying any serious penalty. Finally, the participants in this study represent a highly educated and motivated segment of the Army and probably reflect a higher fitness level than the typical soldier over 40.

CHAPTER VII

PARTICIPANT RESPONSE

The participants were asked to provide their response to the program. (Incl 7) Continuation of the program at the AWC received unanimous approval and the majority (78.8%) felt that it should be incorporated with the Well Woman's Program into Family Practice Procedures. Sixty-nine percent indicated that coronary risk screening should be considered for all career soldiers beginning at the career courses, NCO Academies, or at the very minimum, the C&GSC--SGM Academy level. The group also felt that some form of maximal stress electrocardiogram testing should be developed and perfected by the Army for soldiers over 40 (83.3%). Determination of body composition and percent body fat were considered as more valid measures of fitness and were suggested as supplements or replacements for scale weight as used in the Army Weight Control Program (74.2%). Although many of the participants were already maintaining many good health habits, it is noteworthy that the study process motivated about half to make changes in the following areas:

weight/percent body fat	66.7 %
change health habits	48.3
increase activity levels	45.8
diet modification	64.2

Almost everyone agreed that it would be more meaningful to begin the program at the beginning of the school year (97.5%), and the majority felt it would be very helpful to include expert guest speakers on health and fitness. It is interesting to note

that although 30 percent of the class smokes (15.7% cigarettes), 68.3 percent of the class felt the hazard so critical to good health that they recommended promotion and programs to help those desiring to quit. The majority of the class (67.5%) felt that information/instruction on health and fitness should be incorporated into the AWC curriculum. Expert guest speakers and instruction on stress were the most frequent responses.

The feedback from students who did not participate was incomplete; however, personal comment and some questionnaire feedback indicate the following reasons for non-participation:

- under physician's care for special medical considerations
- don't want to know; it's just more to worry about
- didn't have enough time
- didn't want an overzealous physician to include remarks in medical record that could result in grounding from aviation status
- didn't want to take a chance on any comments being entered in medical record that could be used as a discriminator in promotion, command, selection, assignment or retention

The written comments provided by the participants were absolutely void of any negative reactions, and reaction can be summarized with the following comments: "most intelligent approach to preventive medicine I have ever seen--professional, factual, understandable and persuasive. Provides analytical, preventive and corrective approach which is badly needed to replace the current official medical policy of "fix it when it breaks."

CHAPTER VIII

PROGRAM RECOMMENDATIONS

I. Continue Coronary Risk Screening at the Army War College.
   A. Start early in the academic year.
   B. Program should be mandatory.
   C. Include screening procedures in the Well Woman's Program.
   D. Provide expert guest speakers and instruction on fitness, diet, nutrition, stress and aerobic activity programs.
   E. Provide training and certification of Dunham Army Health Clinic personnel in the techniques of and skills in graded exercise stress electrocardiograms. (Incl 8)
   F. Include submaximal stress testing to determine fitness levels, target heart rate training zones and potential cardiovascular problems requiring further attention.
   G. Initiate action to design and construct a Fitness Trail.

II. Implement the following recommendations for Army-wide application:
   A. Initiate screening programs at the officer career course and NCO academy level.
   B. Incorporate into the physical examination program with follow-up for those exhibiting high risk factors.
   C. Include maximal exercise stress electrocardiograms for persons 35 years of age and older who show evidence of cardiovascular disease or significant combinations of risk factors including family history, elevated blood pressure, hyperlipidemia, diabetes, cigarette smoking or obesity.

D. Provide submaximal (85%) exercise stress electrocardiograms for all persons 40 years of age or older as a safe, objective, age-adjusted measurement of cardiorespiratory fitness, and to provide safe and reasonable target heart rates for aerobic activity.

E. Supplement current scale weight control standards with body composition standards of 15-19 percent body fat for men and 22-27 percent for women.

F. Activate and perpetuate an intensive campaign to discourage smoking.

1. Enforce current regulations that prohibit smoking in auditoriums, conference and classroom areas.[1]
2. Promote government or commercial programs to assist people in quitting.
3. Eliminate sale of cigarettes from the commissary, just as all forms of alcohol are excluded.
4. Eliminate sale of cigarettes from the Post Exchanges and clubs.

G. Consider coronary risk screening for spouses as a benefit and as a positive reinforcement to the soldier in his/her home environment.

H. Program should be on a mandatory basis; however, personal results should be maintained in medical channels and not used as discriminators for promotion, school or assignment selection.

I. Establish an office at DA level to coordinate medical assessment, develop policy and programs, and monitor-evaluate individual and unit fitness readiness.
(Incl 9)

CHAPTER VIII

FOOTNOTES

1. AR 1-8, "Smoking in DA Occupied Buildings and Facilities", 18 Nov 1977, p. 2.

IX

EPILOGUE

Our country faces a potential adversary that not only has superiority in numbers, but increasing parity in overall technology. In the face of manpower constraints and the absence of an effective mobilization capability, we must be prepared to "fight outnumbered and win". We must not only continue to develop and field the best equipment and weapons systems available, but we must do a better job of conserving experienced resources and training an Army that is mentally prepared and physically fit to fight. We must develop a timely evaluation system to determine the fitness sustainability of our personnel resources, initiate training and education programs and motivational techniques to optimize our potential capabilities, and ensure that we have the endurance and stamina to meet the rigors of tomorrow's battlefield. Fitness readiness is an integral part of unit readiness and should be pushed to the front and demonstrated by every soldier in the Army, regardless of rank.

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CofS, HQ AVARDCOM
St. Louis, MO 63166

(One copy each to the above, except where noted in parenthesis.)

Deaths and Disability Separations,
Active Duty Army Personnel,
Worldwide, CY 1978 and 1979

	CY 1978		CY 1979	
	Total	Percent of Total Spns/Deaths	Total	Percent of Total Spns/Death
Disability Separations	72Ø4		7435	
Disability separations with diagnosis codes 39Ø-458 as the underlying cause	396	5.5	47Ø	6.3
Deaths	81Ø		778	
Deaths with diagnosis codes 39Ø-458 as the underlying cause	74	9.14	88	11.3

SOURCE: Individual Patient Data System (IPDS)

International Classification of Diseases (ICDA-8) diagnosis codes 39Ø-458, Diseases of the Circulatory System.

DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
PATIENT ADMINISTRATION OFFICE

DEPARTMENT OF THE ARMY
US Army Patient Administration
Systems and Biostatistics Activity
HSHI-QBS 24 Apr 80

J. 21

DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
WASHINGTON, D.C. 20310

REPLY TO
ATTENTION OF:

DASG-PSA

2 MAY 1980

SUBJECT: Deaths and Disability Separations, Active Duty Army Personnel, Worldwide, CY 78 and 79

Commander
US Army War College
ATTN: COL Don Williamson/Class of "80"
Carlisle Barracks, PA 17013

1. Reference FONECON between COL Williamson, Army War College, and Mr. Vinyard, US Army Patient Administration Systems and Biostatistics Activity, Ft Sam Houston, Texas, 31 March 1980, SAB.

2. Subject data are attached as Incl 1.

FOR THE SURGEON GENERAL:

1 Incl
as

WILLIAM R. TUTEN III
COL, MSC
Chief, Patient Administration Division

VANGUARD OF FREEDOM
BICENTENNIAL 1775 1975
UNITED STATES ARMY

AMERICAN REVOLUTION BICENTENNIAL
1776-1976

DEPARTMENT OF THE ARMY
DUNHAM U S ARMY HEALTH CLINIC, FGGM MEDDAC
CARLISLE BARRACKS, PENNSYLVANIA 17013

SUBJECT: Army War College Fitness Evaluation 7 March 1980

TO: Class of 1980

The Dunham Army Health Clinic, in cooperation with an Army War College student project, will be providing the Class of 1980 with an opportunity for a health evaluation and individual cardiac risk profile.

The purpose of this project is to promote fitness through an increased awareness of potential cardiac risk factors that can be used as a yardstick in developing and maintaining optimal health. These evaluations will serve as a pilot project to determine feasibility of its use for future AWC classes.

The two-phased evaluation will consist of a comprehensive laboratory analysis of the primary risk factors associated with cardiovascular disease, and a medical consultation using the latest data provided by the Aerobics International Research Society/Cooper Clinic of Dallas, Texas.

Students will be scheduled for the laboratory work beginning 17 March, and appointments will be made for the follow-up consultations. Confidential profile charts, similar to the one attached,will be provided at the consultation period. It should be noted that this is a voluntary project; however, all students should take advantage of this tremendous opportunity. Your cooperation will be appreciated, and hopefully your quality of life enhanced by this assessment.

Graham E. Beard MD

1 Incl
as

GRAHAM E. BEARD, M.D.
COL, MC
Commanding

DISTRIBUTION:

S
LTC D R Williamson, AY80 (3)
AWCS (3)

Incl 2

Fitness Level and Coronary Risk Profile

Cholesterol

It is thought that cholesterol causes obstructions of the coronary arteries and, ultimately, fatal disease. The laboratory analysis will determine the amount of high and low density lipoprotein cholesterol in the system. Simply stated, the HDL is good and high amounts are thought to lower the incidence of coronary disease. The LDL is the culprit that clogs the pipes and causes the trouble.

Triglycerides

These blood fats are another recognized coronary risk factor and when combined with elevated low density cholesterol may thicken and slow down the blood so that the cholesterol can adhere to the arterial walls without being swept away.

Glucose

Numerous studies indicate that a chronically raised level of sugar in the blood may result in diabetes which has been linked with heart disease.

Body Fat

Excess fat places a direct strain on the heart and other systems of the body. Percent of body fat will be measured by a skinfold technique of representative sights on the body. Standards at the Aerobics Center require males to be 19 percent fat or less and females 22 percent or less.

Blood pressure

High blood pressure is generally recognized as one of the three major risk factors along with cigarette smoking and cholesterol. It is the major cause of strokes, ruptured blood vessels in the brain. Blood pressures under 140/90 are considered normal.

Personal and Family History

Statistical evidence indicates that coronary disease appears to run in families. If so, the prudent individual should attempt to lower/eliminate as many other risk factors as possible.

Cigarette smoking is a major cause of heart disease, and risk increases with use.

Tension-Anxiety

Tension, stress and agressive behavior patters (Type A) place a strain on the heart that has long been recognized as potentially lethal. During stress the body's hormonal systems speed up the heart rate and increase blood pressure to prepare the body for fight or flight. Continued stress situations without release of tension can put the heart and blood vessels under constant pressure that could result in heart disease.

Resting ECG

This is a valuable tool used in detecting potential heart disease, heart attacks, blocks and abnormal enlargements.

Aerobic Capacity

A 1.5 mile run will be substituted for the Balke treadmill test to determine aerobic capacity. Aerobic capacity is the maximum amount of oxygen the body can process during an intense effort. The timed results of this run correlate very well with treadmill times as a direct measure of aerobic capacity. This simply defines the fitness level of the cardiovascular system. Clearance to perform this test will be given by the physician during the consultation phase and the run will be conducted under medical supervision.

COOPER CLINIC / Dallas, Texas

Fitness Level and Coronary Risk Profile

Name

MALES. *UNDER 30 YEARS OF AGE

2-22-77

CORONARY RISK	PERCENTILE RANKINGS	BALKE TREADMILL TIME (min)	CHOLESTEROL (mg %)	TRIGLYCERIDE (mg %)	GLUCOSE (mg %)	URIC ACID (mg %)	% BODY FAT	RESTING HEART RATE (bpm)	RESTING BLOOD PRESSURE SYSTOLIC (mm Hg)	RESTING BLOOD PRESSURE DIASTOLIC (mm Hg)
	YOUR VALUES	12:40	160	172	88	7.3	21.8	82	116	76
VERY LOW	99	29 00	120.2	27 2	74.9	4 4	7 2	39 7	94 2	59 6
	95	25 00	142 2	48 4	83 4	4 9	9 6	45 8	102 3	64 3
	90	22.30	153 7	55 3	87.9	5 4	11.6	50.0	109 7	69 8
	85	22 00	160 2	61.8	89 8	5 6	12 9	52 1	110 3	70 3
	80	21.00	164 9	66 2	92 6	5 8	13 9	54 4	112 3	72 3
LOW	75	20.00	171.6	71 3	94.9	5 9	15 3	55 9	116.4	74 5
	70	20 00	178 0	76 2	96 0	6 1	16 2	57 6	118 3	77 6
	65	19 00	185.1	82.2	98 2	6 2	17 1	59 2	119 7	78 2
	60	18 25	190 4	87 2	99.7	6 4	18 0	60.1	120 0	79 6
	55	18.00	194.7	92.8	100 3	6.5	19 1	61.7	120.2	79 8
MODERATE	50	17.10	199 2	99 7	102 0	6.7	20 1	62.8	120 5	80 0
	45	17.00	202.5	110 0	103.1	6 8	21.2	64 3	123.9	80 2
	40	16 00	206.8	123.1	104.3	7.0	22.3	65 5	127.7	80 4
	35	15:30	211 2	136 6	104.9	7.1	23 4	67.7	129 7	81.8
HIGH	30	15.00	217 6	148 1	105 3	7 3	25.4	69.5	130 1	83.9
	25	14:55	222 1	169.9	106 3	7.5	27 4	70.5	131.9	85 4
	20	13 45	228 9	180 3	109.2	7.7	28 6	72.4	136 2	87 9
	15	12.50	240.3	199 9	110 3	8.0	30 5	76 3	139.6	89.9
VERY HIGH	10	12 00	250 5	234 4	113.1	8 3	32 8	80 4	140 4	90.4
	5	10 00	268 9	296 0	117.6	9 0	38.0	87 9	149.6	99.6
	1	7.00	300.1	761.8	123.1	10 1	45.0	69 7	158.3	109.7
POP SIZE		371	273	271	271	271	248	358	367	367
AVERAGE		17.21	200.3	132 7	100.8	6 7	21 6	64.3	124.2	80 3
STANDARD DEVIATION		4 25	39.1	107 8	14.5	1.2	9 1	12 5	13 4	9.6
NORMAL ** VALUE		19 00+	(250.0	(135 0	(110 0	(6.0	(19 0	(72.0	(140.0	(90 0

*Data based on first visit only

**Upper limits generally accepted by most physicians

PERSONAL HISTORY OF HEART ATTACK

- 0 [X] NONE
- 2 [ ] OVER 5 YEARS AGO
- 3 [ ] 2 - 5 YEARS AGO
- 5 [ ] 1 - 2 YEARS AGO
- 8 [ ] 0 - 1 YEARS AGO

FAMILY HISTORY OF HEART ATTACK

- 0 [ ] NONE
- 2 [ ] YES, OVER 50 YEARS
- 4 [X] YES, 50 YEARS OR UNDER

SMOKING HABITS

- 0 [ ] NONE
- 1 [ ] PIPE/CIGAR
- 1 [ ] PAST ONLY/QUIT
- 2 [ ] 1 – 10 DAILY
- 3 [ ] 11 – 30 DAILY
- 4 [X] 30+ DAILY

TENSION – ANXIETY

- 0 [ ] NO TENSION, VERY RELAXED
- 0 [ ] SLIGHT TENSION
- 1 [ ] MODERATE TENSION
- 2 [ ] HIGH TENSION
- 3 [X] VERY TENSE, "HIGH STRUNG"

RESTING ECG	EXERCISE ECG
0 [X] NORMAL (NEGATIVE)	[X] 0
1 [ ] EQUIVOCAL (BORDERLINE)	[ ] 4
3 [ ] ABNORMAL (POSITIVE)	[ ] 8

AGE FACTOR

- 0 [X] UNDER 30 YEARS OF AGE
- 1 [ ] 30 - 39 YEARS OF AGE
- 2 [ ] 40 - 49 YEARS OF AGE
- 3 [ ] 50 - 59 YEARS OF AGE
- 4 [ ] 60+ YEARS OF AGE

TOTAL CORONARY RISK 23

[ ] VERY LOW	(0 - 4)
[ ] LOW	(5 - 14)
[X] MODERATE	(15 - 24)
[ ] HIGH	(25 - 34)
[ ] VERY HIGH	(35*)

AWC STUDY

CORONARY RISK PROFILE

INSTRUCTIONS:

The AWC cardiovascular fitness study will consist of three separate evaluations:

1. Laboratory evaluation
2. Doctor's evaluation of cardiovascular studies
3. Aerobic capacity (1.5 mile run)

Your entry into this study will begin with the laboratory evaluation. Enclosed you will find two schedules -- one, a list of subgroup assignments and the other a list of Seminar groups. Those in the subgroups will be the first to visit the lab on the assigned dates (Incl 1). All others will visit the lab by Seminar group on the dates listed (Incl 2). The lab work up will be a fasting study (no food or drink except water after midnight the night before the blood is drawn.) On the assigned dates please come to the Clinic Conference Room (Room 703) between 0730-1000, and bring your medical stamp with you. Once you have completed the lab work, you will be asked to make an appointment with the "AWC Class Study Doctor" for the cardiovascular status evaluation consultation and activity prescription.

When you come for the doctor's appointment, bring your health records. You will be given your lab results and will have your blood pressure, weight, % body fat measurements and resting EKG, cardiac history and physical examination. A health self-appraisal instrument will also be available for your use in learning more about cardiac risk factors. You also will be advised as to your capability of participating in the 1.5 mile run and scheduled accordingly.

The 1.5 mile run will be conducted at Indian Field under the supervision of COL Don Williamson. This will be a timed run and should be done at a maximum effort. A word of caution -- any chest pain or moderately severe shortness of breath is your body's signal to terminate the run. On site medical service will be available. Upon completion of this test, your total cardiac risk profile will be provided.

PLEASE NOTE:

It is important that everyone make the initial lab appointment. It should only take a few moments of your time and is essential to your evaluation. The follow-on appointment with the physician is more time consuming and can be conveniently arranged. Those who are unable to make the scheduled lab period will be rescheduled after 17 April.

AY80 STATISTICAL DATA, USAWC

PART I - STUDENTS
(as of 1 August each year)

1. Age (years & months)		1978	1979	1980
a. Average age				
USA Active List	No	192	160	155
	Yrs/Mo	41/10	42/05	41/06
USMA Grad	No	33	37	39
	Yrs/Mo	40/11	41/06	41/06
Non-USMA	No	159	123	116
	Yrs/Mo	42/00	42/05	41/06
USN	No	5	5	4
	Yrs/Mo	43/10	41/06	40/04
USMC	No	6	9	8
	Yrs/Mo	42/03	42/07	43/05
USAF	No	16	16	16
	Yrs/Mo	41/04	41/06	41/05
USCG	No	1	1	1
	Yrs/Mo	40/08	42/04	42/01
USAR & ARNG & ANG	No	16	17	17
	Yrs/Mo	43/01	44/05	44/05
Civilians	No	10	10	9
	Yrs/Mo	42/01	40/05	39/07
All Students	No	246	218	210
	Yrs/Mo	41/11	42/05	41/06
b. Youngest Student	Yrs/Mo	32/11	33/01	34/06
c. Oldest Student	Yrs/Mo	53/06	56/03	50/11

2. Source of Commission

	USA/USAR/ARNG			USN			USMC			USAF/ANG			USCG			TOTAL		
	78	79	80	78	79	80	78	79	80	78	79	80	78	79	80	78	79	80
Svc Acad	33	39	39	1	3	0	0	2	0	3	1	0	1	0	0	38	44	39
ROTC	127	109	108	1	0	0	3	2	1	12	12	8	0	0	0	143	123	117
OCS, OTC, PLC	34	17	13	3	1	4	3	5	6	0	2	3	0	1	1	40	26	27
Avn Cadet	0	0	0	0	1	0	0	1	1	1	1	6	0	0	0	1	3	7
AUS Direct	3	2	2	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2
Reserve Dir	8	3	4	0	0	0	0	0	0	0	0	0	0	0	0	8	3	4
National Guard	3	7	5	0	0	0	0	0	0	0	0	0	0	0	0	3	7	5
Merchant Marine	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	208	177	171	5	5	4	6	9	8	16	16	17	1	1	1	236	208	201

AY80 USAWC Statistical Data (cont)

3. Class Composition

a. Uniformed Services	1978	1979	1980
USA Combat Arms			
ADA	9	8	9
Armor	24	14	21
FA	29	27	30
Inf	58	51	41
	120	100	101
USA Support Arms			
CE	15	14	16
MI	10	8	5
MPC	6	3	6
SigC	10	7	12
	41	32	39
USA Services			
AGC	12	7	5
ANC	0	0	0
CA	0	1	0
Ch	1	1	1
CmlC	2	1	2
DC	0	0	1
FC	3	1	1
JAGC	3	3	2
MC	4	2	2
MSC	2	2	4
OrdC	8	15	3
QMC	4	8	3
TC	8	4	7
	47	45	31
USA Total	208	177	171
USN	5	5	4
USMC	6	9	8
USAF	16	16	16
USCG	1	1	1
ANG	0	0	1
Total Military	236	208	201
b. **Civilians**			
DAC	1	1	2
DIA	2	1	1
NSA	1	1	1
USFS	1	1	1
ICA	2	2	0
DLA	1	1	1
CIA	1	1	0
D/S	1	0	2
GAO	0	1	0
DOE	0	1	0
DMA	0	0	1
	10	10	9
c. Class Total	246	218	210

AY80 USMC Statistical Data (cont)

4. Education and Service Schooling

a. Highest Degree Attained:

		1978	1979	1980
Doctorate	No	5	9	7
	%	2.0%	4.1%	3.3%
Law Degrees	No	4	4	1
	%	1.6%	1.8%	.3%
Medical Field Degrees	No	4	2	3
	%	1.6%	.9%	1.4
Masters	No	138	132	136
	%	56.1%	60.6%	65%
Bachelors	No	90	70	63
	%	36.6%	32.1%	30.0%
Some College	No	5	1	0
no degree	%	2.0%	.5%	.0%
No College Credit	No	0	0	0
	%	.0%	.0%	.0%
Total	No	246	218	210

b. Military Service Colleges & Equivalent Schools (Armed Forces Officers)

USACGSC, AFSC, or Equiv		1978	1979	1980
Graduated	No	218	194	197
	%	92.4%	93.2%	98%
Const Credit	No	10	7	2
	%	4.2%	3.4%	1%
Subtotal	No	228	201	199
	%	96.6%	96.6%	99%
Non-Grad	No	8	7	2
	%	3.4%	3.4%	1%
Class Total	No	236	208	201

5. Service

a. Length of Active Federal Commissioned Service (Armed Forces Active Duty Officers)

		1978	1979	1980
USA	No	192	160	155
	Yrs/Mo	18/11	19/05	18/04
USN	No	5	5	4
	Yrs/Mo	20/00	18/05	16/07
USMC	No	6	9	8
	Yrs/Mo	20/01	20/03	20/05
USAF	No	16	16	16
	Yrs/Mo	18/06	17/06	18/07
USCG	No	1	1	1
	Yrs/Mo	19/02	19/01	19/01
Class Total	No	220	191	184
	Yrs/Mo	19/00	19/04	18/05

AY80 USAWC Statistical Data (cont)

6. Type of Experience, CO & DCO (Armed Forces Officers)

		1978	1979	1980
(1) Command Echelon				
SF Det or Co	No	2	4	2
	%	.8%	1.9%	1.3
Bn	No	190	164	122
	%	80.5%	78.9%	63.7
Regt/Bde/Gp/BG	No	15	5	7
	%	6.4%	2.4%	3.1
Svc/Actv/Unit/ Instl	No	25	20	15
	%	10.6%	9.6%	7.7
Div Arty	No	0	0	0
	%	.0%	.0%	.0%
Equiv Experience*	No	7	4	1
	%	2.9%	1.9%	.5%
No Bn or Higher Expc-Total	No	34	35	46
	%	14.4%	16.8%	23.7%
USA	No	26	21	24
	%	12.5%	11.9%	52.1%
USN	No	0	0	3
	%	.0%	.0%	6.5%
USMC	No	0	4	1
	%	.0%	49.4%	2.1%
USAF	No	8	10	17
	%	50.0%	62.5%	37.2%
USCG	No	0	0	1
	%	.0%	.0%	2.1
(2) Staff Echelon				
Presidential	No	1	2	0
	%	.4%	.9%	.0%
DOD**	No	8	17	10
	%	3.4%	8.2%	4.9%
Combined	No	9	4	3
	%	3.8%	1.9%	1.4%
Unified, Joint	No	17	13	7
	%	7.2%	6.3%	3.4%
Dept HQ Staff	No	128	107	97
	%	54.2%	51.4%	48.2%
Major Command	No	67	54	34
	%	28.4%	26.0%	16.9%
Army***	No	28	18	4
	%	11.9%	8.7%	1.9%
MAAG/Mission	No	4	8	5
	%	1.7%	3.9%	2.4%

Note: USN/USMC/USAF/USCG members are included and considered on a basis of equivalent command experience.

* Equivalent command experience (Project Mgr, District Engr, etc.)
** Includes major DOD Agencies and OSD assignments.
*** Comparable type HQ for USN, USMC, USAF, and USCG.

CORONARY RISK APPRAISAL

HEART DISEASE | STROKE

WHAT THEY ARE: Heart disease and stroke are major causes of premature death and disability.

A *heart attack* occurs when a blood clot blocks a coronary artery and stops the blood flow to a portion of the heart, killing that portion of the heart muscle. A *stroke* occurs when there is interference with the blood supply to the brain. Atherosclerosis is the slow, progressive process that sets the stage for heart attack and stroke. The arterial walls become thickened and roughened, making it difficult for the blood to pass through the narrowed arteries. A clot can develop easily under those conditions, block the artery, and deprive the heart or brain of blood

WHAT THE RISKS ARE: Your risks of heart disease and stroke are related to the following factors.

Age. It should come as no surprise that the older you are the greater are your chances of having a heart attack or a stroke.

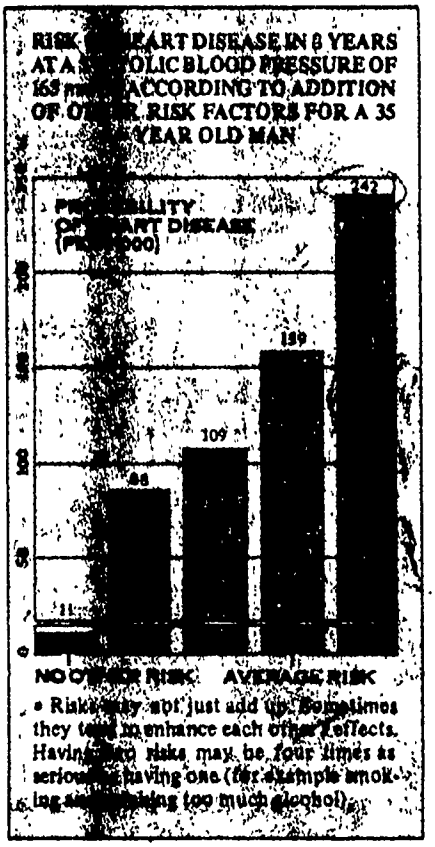
As men reach their mid-thirties the risk of a heart attack increases significantly.

Sex. The average risk of heart disease and stroke is less for women than for men. This difference is reflected in woman's longer average life span.

Blood Pressure. The higher your blood pressure, the higher your risk of heart disease and stroke. There is no threshold value for high blood pressure (

Blood Cholesterol. An increased level of cholesterol in your blood increases your risk of heart disease and stroke. Here, too, there is no threshold value. The higher your cholesterol value, the higher your risk

Blood Sugar. When blood sugar is not controlled by the body (as in diabetes) so that levels of blood sugar are allowed to rise above normal, the risks of heart disease and stroke increase.



Exercise. An adequate amount of vigorous exercise on a regular basis may protect you against heart disease and stroke. The amount and nature of your exercise has been considered in the estimation of your overall risk of cardiovascular disease

Smoking. How much you smoke, whether or not you inhale, and how long ago you stopped smoking influence your risk of cardiovascular disease

Type A Personality. How you cope with stress and the way you react to difficult situations affect your risk of a heart attack Type A personalities have an increased risk

WHY IT MATTERS: Of the eight risk indicators listed above, you can control the last six to varying degree

the graph on this page shows risk for a 35-year old man with elevated blood pressure and the increase in risk as other characteristics are added

WHAT YOU CAN DO: If your risks of heart disease are greater than average, chances are you can reduce them. Many people are doing just that. At present, there is a striking decline in deaths from heart disease in the United States, attributed to the changes that people have made in their habits of smoking, diet, and exercise Studies show that those who quit smoking significantly reduce their risk of death from a heart attack Even if you are at average risk you may be able to protect yourself further.

On the next page you see what your chances are of having a heart attack or a stroke

this section will allow you to focus on individual components of this overall risk. As you proceed through your Report make sure you understand how your behavior affects your risk. Then ask yourself whether you want to and are able to make some changes to improve your health.

COOPER CLINIC/Dallas, Texas — Coronary Risk Profil

NAME:

Males: 40-49 Years of Age

PERCENTILE RANKINGS		1.5 MILE TIME(MIN)	CHOLESTEROL HDL (mg. %)	CHOLESTEROL LDL (mg. %)	TRIGLYCERIDE (mg. %)	GLUCOSE (mg. %)	% BODY FAT	RESTING BLOOD PRESSURE SYSTOLIC (mm Hg)	RESTING BLOOD PRESSURE DIASTOLIC (mm Hg)
YOUR VALUES:									
VERY LOW	99	< 11:30	79.7	86.9	36.0	75.0	9.9	98.0	60.0
	95		66.0	106.2	50.0	81.0	14.1	102.0	68.0
	90	0	59.0	118.0	62.0	85.0	15.9	106.0	70.0
	85		55.0	124.5	69.0	87.0	17.0	110.0	70.2
	80		53.0	132.0	75.0	89.0	18.1	110.0	74.0
	75		51.0	138.0	82.0	90.0	19.1	112.0	75.0
LOW	70	11:31	48.0	144.0	89.0	91.0	20.0	115.0	78.0
	65	1	47.0	147.0	95.0	93.0	21.0	116.9	78.0
	60		45.0	153.0	101.0	94.0	21.8	118.0	80.0
CORONARY	55	13:00	44.0	157.0	108.0	95.0	22.7	120.0	80.0
					MEDIAN				
	50	13:01	43.0	162.0	116.0	97.0	23.5	120.0	80.0
MOD	45	2	41.0	166.0	125.0	98.0	24.3	120.7	80.0
	40		39.0	171.0	133.4	99.0	24.9	124.0	82.0
RISK	35	15:35	38.0	175.0	145.6	100.0	25.7	125.0	84.0
	30	15:36	37.0	180.0	158.0	102.0	26.6	128.0	85.0
HIGH	25	3	36.0	185.0	175.0	104.0	27.6	130.0	88.0
	20		34.0	189.0	193.0	106.0	28.8	132.0	90.0
	15	17:30	33.0	198.0	217.0	109.0	30.3	138.0	90.0
VERY HIGH	10	4 > 17:31	30.0	208.7	250.0	112.0	32.5	140.0	94.0
	5		27.0	227.0	322.8	118.0	36.1	148.0	100.0
	1		19.0	264.4	531.5	140.0	41.4	160.5	110.0

PERSONAL HISTORY OF HEART ATTACK OR BYPASS

- 0 ☐ NONE
- 2 ☐ OVER 5 YEARS AGO
- 3 ☐ 2-5 YEARS AGO
- 5 ☐ 1-<2 YEARS AGO
- 8 ☐ 0-<1 YEAR AGO

FAMILY HISTORY OF HEART ATTACK

- 0 ☐ NONE
- 2 ☐ YES, OVER 50 YEARS
- 4 ☐ YES, 50 YEARS OR UNDER

- 6 ☐ KNOWN HEART DISEASE W/O HEART ATTACK OR BYPASS

SMOKING HABITS

- 0 ☐ NONE
- 0 ☐ PAST 1 YEAR OR MORE
- 1 ☐ PAST ONLY LESS THAN 1 YEAR
- 1 ☐ PIPE/CIGAR
- 2 ☐ 1-10 DAILY
- 3 ☐ 11-30 DAILY
- 5 ☐ 30-40 DAILY
- 6 ☐ MORE THAN 40 DAILY

TENSION - ANXIETY

- 0 ☐ NO TENSION, VERY RELAXED
- 0 ☐ SLIGHT TENSION
- 1 ☐ MODERATE TENSION
- 2 ☐ HIGH TENSION
- 3 ☐ VERY TENSE, "HIGH STRUNG"

- 3 ☐ DIABETES

AGE FACTOR

- 0 ☐ UNDER 30 YEARS OF AGE
- 1 ☐ 30-39 YEARS OF AGE
- 2 ☐ 40-49 YEARS OF AGE
- 3 ☐ 50-59 YEARS OF AGE
- 4 ☐ 60+ YEARS OF AGE

RESTING ECG	EXERCISE EC
0 ☐ NORMAL	☐ 0
1 ☐ EQUIVOCAL	☐ 4
3 ☐ ABNORMAL	☐ 8

TOTAL CORONARY RISK

- ☐ VERY LOW* (0-4)
- ☐ LOW (5-12)
- ☐ MODERATE (13-21)
- ☐ HIGH (22-31)
- ☐ VERY HIGH (32+)

CHOLESTEROL

WHAT IT IS: Cholesterol is a fatty substance found in all animal tissues and abundant in eggs, organ meats (liver, kidney, brain), milk, butter, and other dairy products. It is essential for normal cell function. Cholesterol levels in the blood roughly range from 150 to 350 mg. Levels less than 220 mg are generally considered normal for adults.

WHAT IT DOES: The blood cholesterol level is directly related to the process which causes heart disease and stroke. Deposits of cholesterol on the walls of blood vessels increase the likelihood that they will become narrow and clogged.

High density lipoprotein (HDL), a substance containing both fat and protein, is found in the bloodstream and seems to work to prevent this build up of cholesterol by carrying it to the liver where it is removed from the circulation. Research has found that HDL decreases the risk of heart disease; men have, on the average, lower HDL than females; diabetics have lower HDL than nondiabetics; and exercise increases HDL.

The cholesterol level in your blood is internally regulated to a certain extent, but also varies according to your age and sex , the amount of cholesterol in your diet, and the type and amount of fat content in your diet.

If your normal diet contains many foods that are rich in cholesterol, such as eggs, milk, and liver, your blood cholesterol level will tend to be higher. The average American consumes 600 mg of cholesterol a day, double the amount that is considered healthy.

Dietary fats are primarily *saturated* and *polyunsaturated*. Generally, animal fats are high in saturated fats. Most vegetable fats like corn oil and sesame oil are high in polyunsaturated fats. Saturated fats increase the level of blood cholesterol and polyunsaturated fats decrease it. It is thought that the polyunsaturated fats are important to the process of removing cholesterol from the bloodstream and that saturated fats hinder the process. Most Americans eat three times more saturated fat than polyunsaturated fat. A more appropriate balance would be 2-3 times as much polyunsaturated as saturated fat.

WHY IT MATTERS: Your risk of having a heart attack or stroke increases as the cholesterol level in your blood increases. When your blood cholesterol is elevated, the inner layers of the artery walls are more likely to be thickened by the build up of fatty materials. As more cholesterol accumulates, the arteries become narrowed and roughened, gradually cutting down the blood flow and therefore the supply of blood to the heart and brain. Obstructed blood flow to the heart may cause a heart attack; insufficient blood to the brain may result in a stroke.

A 30-year-old man with a cholesterol level of 260 mg/100 ml has 5.5 times the risk of having a heart attack in the next five years as a man of the same age with a cholesterol level under 200 mg/100 ml

WHAT YOU CAN DO: Elevated blood cholesterol acts to increase your risk of heart disease and stroke. Although scientific studies show contradictory results, most of the evidence to date suggests that lowering your cholesterol intake will help to reduce your risk. It certainly would not hurt to modify your cholesterol level as a precautionary measure.

In order to decrease your blood cholesterol level, reduce your intake of cholesterol and saturated fats. Try to stay below 300 mg of cholesterol per day (see table on following page).

Trim away visible fat from meats, poultry, and fish and reduce or eliminate the use of fat drippings. Be more aware of the fats in products such as hamburgers, cheese, ice cream, baked goods, and other highly processed foods.

Get more exercise. It may increase the level of high density lipoprotein in your blood and reduce your risk of heart attack and stroke.

WEIGHT

WHAT IT IS: Your *desirable* weight is the weight at which people of your age, height, build, and sex tend to live longest. Since people value their looks, they tend to react more to their appearance than to how much they weigh. It is important to understand that the *average* American male weighs 20-30 pounds more than his desirable weight and the *average* American female weighs 15-30 pounds more than her desirable weight.

Obesity is a problem of fat, not weight. It refers to excessive amounts of *body fat* as opposed to muscle or bone. Experts consider people who are 20% more than their desirable weight to be *obese.* Your waistline is a good indicator of whether or not you are obese.

Even if you are not obese, but *are* too fat, you will benefit from achieving your desirable weight.

WHAT IT DOES: Obesity is associated with many changes in metabolism and circulation. The long-term effects of obesity are not fully understood but it is clear that they are detrimental to your health.

WHY IT MATTERS: Overall Mortality. It is no coincidence that individuals who live a long life tend to be lean and active people who eat light, well-balanced meals. Life insurance studies show that the more you weigh, the greater your risk of premature death. In fact, your chances of premature death increase by 10% for every 10 pounds that you are overweight.

Heart Disease and Stroke. The risks of heart disease and stroke increase substantially for obese people. If you are 20% over your desirable weight your risk of heart failure and stroke doubles and your chances of getting angina pectoris and of dying suddenly from a heart attack are also increased.

Cholesterol. Obesity is associated with higher cholesterol levels. Losing weight tends to lower cholesterol levels and decrease the associated risks of heart attack and stroke.

Blood Pressure. Your risks of heart attack and stroke are influenced by your blood pressure and your blood pressure is affected by your weight. It has been estimated that a weight gain of 10% increases your systolic blood pressure by about 6-7 mm. Losing weight has the opposite effect on your blood pressure.

Cancer. Women who are obese have an increased risk of cancer of the womb and a slightly increased risk of breast cancer.

Other Reasons. Being obese imposes burdens on the body that take their toll over time. Obese people tend to develop degenerative arthritis, gallstones, and gallbladder inflammation more frequently than non-obese people.

WHAT YOU CAN DO: Obesity occurs because you consume more calories than you expend. As you get older, you use less energy and tend to gain weight. There is no magic formula for losing weight despite the numerous books, medicines, and diets that are available.

If you decide that you want to lose weight, it may be helpful for you to learn about the composition of food as well as the calories in it.

It may also be helpful to learn other ways in which food meets your needs. Is it a reward or a compensation for stress or boredom?

Follow these basic principles in any diet program:

Plan to lose weight gradually, not all at once: set realistic weight loss targets such as losing a pound a week.

Reward yourself when you reach your goals, but don't use food as the reward.

Enlist the help and support of family and friends, perhaps by dieting with someone else.

Learn about what you eat and develop healthy eating habits.

Decrease your energy intake and eat fewer calories.

Don't eat between meals.

Increase energy expenditure by excercising.

Protect yourself against inadequate nutrition by eating a wide variety of foods.

SMOKING

WHAT IT IS: Smoking tobacco is a habit. The consequences of smoking have been investigated on a large scale only since the 1950s and research has increasingly shown that inhalation of tobacco smoke is a massive threat to health. About 1,000 different substances are known to be present in tobacco smoke, including a large portion of toxic gases.

WHAT IT DOES: Tobacco smoke is absorbed through your mouth, throat, and lungs. Of the billions of particles inhaled, some 70% remain in the lungs. The irritants in tobacco smoke produce increased mucus secretion, coughing, and closing of small airways. Inhaled *carbon monoxide* acts on the red blood cells to interfere with the transport of oxygen, vital to the functioning of the body tissues. It aggravates chronic lung disease and contributes to arteriosclerosis and coronary heart disease by narrowing the blood vessels.

The *tar* in cigarette smoke contains many cancer-causing substances.

Nicotine stimulates the heart, increases the heart rate and blood pressure, and narrows the blood vessels. As a consequence, the heart has a greater need for oxygen, increasing the danger of a heart attack.

WHY IT MATTERS: As a group, cigarette smokers have a death rate 60-80% greater than nonsmokers. They are more likely than nonsmokers to suffer premature disability and death from a wide variety of diseases. However, research indicates that a great part of the excess risk associated with cigarette smoking is gone within a year or two after quitting.

Smoking contributes to an increased chance of sickness and death from many conditions including the following:

Heart Disease. The risk of coronary heart disease increases proportionately the more you smoke. Your risk decreases if you stop.

Stroke. Smoking increases your risk of suffering and dying from a stroke.

Cancer. Ninety percent of all lung

cancer occurs in smokers. For both men and women, the risk of developing lung cancer is directly related to the number of cigarettes smoked per day, the duration of smoking, the age that smoking began, the depth of inhalation, and the tar and nicotine levels in the cigarette smoked. Your risk of developing lung cancer decreases when you give up smoking. Cigarette, pipe, and cigar smoke also increase the risks of getting cancer of the mouth, throat, larynx, esophagus, pancreas, and bladder.

Chronic Lung Disease. One of the most frequent causes of chronic disability in the United States and one of the major contributors to this disease along with air pollution and occupational exposures is cigarette smoking. Emphysema (a loss of elasticity in the lungs) occurs more frequently in those who smoke cigarettes.

Respiratory Infections. Smokers have more respiratory infections than nonsmokers, and the cases are usually more severe. They also tend to miss more days from work due to respiratory illness.

Smoking and Pregnancy. Babies born to mothers who smoked during pregnancy have a lower birth weight and a higher death rate in their first months of life than babies born to nonsmoking mothers. There is also a greater risk of stillbirths and spontaneous abortions due to smoking during pregnancy.

WHAT YOU CAN DO: Literally *millions* of people have been able to give up smoking. Once they make up their mind to do so, about half of all cigarette smokers can probably stop smoking with only temporary discomfort. Others may suffer intensely for days and weeks. Those who are able to give up cigarettes report a great sense of satisfaction and pride in being able to do so.

If you don't smoke now don't start and don't be afraid to ask that your environment be smoke-free.

Help the smoker who wants to stop by supporting his/her decision.

If you do smoke now find some strong reasons for quitting. List the pros and cons.

There is no sure technique for giving up smoking. People smoke for different reasons and what helps one may not work for another. Check out the alternatives. Use some of the numerous books and local resources to provide yourself with information. Find a method of quitting that fits your temperament and set a date. Your expectations may be worse than the real thing.

STRESS

WHAT IT IS: You have just retired or have just been promoted, you are about to give birth or are about to have surgery, you have just made or have lost a lot of money all of these are stressful situations. A stressful situation is one that threatens the balance and order a person works to establish and maintain. To maintain balance you must continuously adjust to change and to stressful, undesirable situations by altering yourself or by modifying your surroundings.

A *stress* is an event or a sequence of events, often unpleasant, that calls for a change on your part. Your mind's and your body's state of alertness and preparedness for action is a *stress reaction* or a strain.

WHAT IT DOES: The body reacts to stress with a pounding heart, a knotted stomach, nervousness, a rise in blood pressure, heavy breathing, and sweating. Authorities on stress describe three stages of adaptation to stress. First your body reacts with alarm. This is followed by the second stage, a period of adjustment or resistance to the stress. If your adjustment to stress is not successful, you may eventually reach the third stage of exhaustion.

In the first stage, tension and anxiety increase, your pulse rate quickens, your muscles are supplied with oxygen, your blood sugar level increases, your pupils become dialated, your rate of digestion decreases, and your perspiration increases.

Normally in the second stage, your body functions become stable and your anxiety diminishes as you deal with the stress. If the stressful situation should continue, however, your body's continued arousal and readiness for action may be damaging. Although you have an ability to tolerate a considerable amount of stress, your body does not have an *unlimited* supply of adaptive energy.

You run the risk that your body's temporary changes in response to stress may become permanent. Chronic stress leads to exhaustion or breakdown.

WHY IT MATTERS: It is at this point of physical or mental exhaustion that some of the very detrimental effects of stress are seen. Chronic stress can lead to a variety of problems.

Just one so-called stress disease, peptic ulcer, affects 5 million Americans and ranks among the leading causes of death in the United States. People with very stressful jobs are likely to suffer such diseases as peptic ulcer or hypertension several times as often as those in less stressful jobs.

Stress also seems to contribute to the risk of having a heart attack and a stroke. See Type A behavior for more information.

Backaches, headaches, sexual problems, and problems with sleep are other common reactions to chronic stress. Victims of continued stress suffer from acute distress, nervousness, and depression, often so serious that the ability to cope with even small changes and tasks is impaired.

WHAT YOU CAN DO: Reactions to stress are highly individual. Some people have a unique capacity to tolerate stress while others are very vulnerable to it. Events that are highly stressful for you may not even be considered unusual by another person. Chances are though that many stresses and changes will be difficult for anyone to handle. Check the next page to compare the number of life changes that you have had to make in the past year to the number that others have adjusted to.

Take action to reduce the frequency of the stressful situations that you *can* control. As for the others, learn to cope adaptively and take action to avert the harmful disease-related effects of chronic stress.

Learn to recognize your particular stress signs.

Pinpoint your sources of chronic stress and try to bring them under control. A problem resulting from stress is not usually the result of a *situation* but of how you *cope* with that situation.

Learn to know when to fight and when to give in.

Make a list of the special ways of coping that work for you and reduce the harmful effects of stress.

TYPE A BEHAVIOR

WHAT IT IS: A high cholesterol diet, elevated blood pressure, smoking, and lack of exercise are not the only factors that contribute to heart attacks. Recent medical research has found a link between people's behavior and coronary heart disease. People who display excessive amounts of hostility, anger, aggressiveness, irritability, impatience, competitiveness, and urgency in their day-to-day life manifest Type A behavior. These people have a greater chance of getting a heart attack than those who are more relaxed and easy-going.

Type A personalities tend to move, walk, and eat rapidly; they also tend to explosively accentuate key words in their speech, get enraged when delayed by traffic or are kept waiting, feel guilty when relaxing, and measure their success in terms of numbers, such as swimming fifty laps or closing four deals.

Type A behavior appears to be a strategy for coping with uncontrollable stress. These individuals will step up performance if they feel that the control they have over their environment is being threatened.

In contrast, non-Type A personalities tend to be easygoing, relaxed people who do not become angry or agitated easily.

It is also becoming clear that you can have a few Type A characteristics or many.

WHAT IT DOES: Type A people respond to physical and environmental challenges with a greater increase in their pulse rate, activity level, and blood pressure than non-Type A people.

Current research suggests that the nervous and hormonal state which Type A behavior produces and sustains leads to higher cholesterol levels and a greater degree of narrowing of blood vessels. Under these circumstances the heart may not receive the oxygen that it needs. If this is the case, a heart attack can occur.

WHY IT MATTERS: What is the relationship between Type A behavior and risk of a heart attack?

- Type A individuals have about twice the risk of a heart attack as non-Type A individuals.
- If you have had one heart attack already and are Type A, you are more likely to have another one than non-Type A people who have had a heart attack.
- Type A individuals are more likely to have narrowing of their blood vessels.
- The more Type A characteristics you have, the greater your risks are of heart attack.

WHAT YOU CAN DO: If you lean towards having a Type A personality it may be important for you to know that you can be hardworking and yet *not* be irritable, hostile, and aggressive at the same time. You should always try to set aside some time each day for relaxation.

In the long run Type A behavior is probably a harmful way of coping with stress and may increase the risk to your health considerably. Personal methods of coping with stress are difficult to change, but there are things you can do.

You have already taken a most important step in reducing risk by finding out if you are a Type A individual. If you do lean towards being Type A, then simply becoming aware that your behavior has a pattern which may be detrimental to your health will undoubtedly help you change.

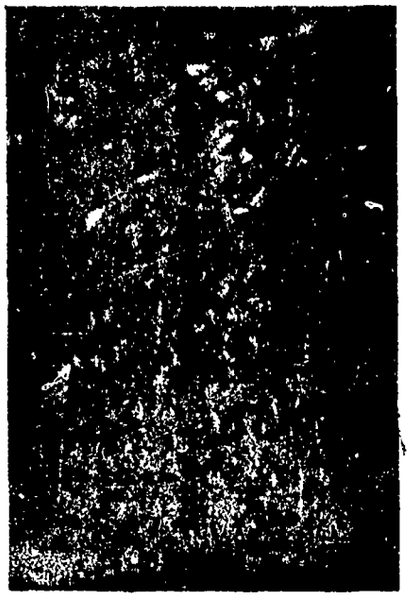
Learn to recognize situations that lead to Type A responses and organize your life-style to avoid them. For example, go to the bank when lines are shortest. Reward yourself for responding in a relaxed, non-Type A fashion. Relaxation exercises may improve your ability to cope with stress and assist you in controlling your life in a less compulsive, hard-driving manner

COPING

WHAT IT IS: Coping is dealing with stress and change. Whether you are aware of them or not, you have a wide range of coping skills which you use to avoid, combat, and respond to stress. These skills are learned, first from family members and later from your own experiences. Your coping strategies and tactics are among your most essential skills for adapting to life's changing conditions and stressful events.

WHAT IT DOES: Specific coping styles and strategies vary from one individual to the next. Your way of coping — for example, sleeping more, talking to your clergy or counselor, or working harder — depends on many factors. Your style of coping is shaped by your upbringing, by those in your social group, or by your prior experience. Therefore, no specific coping strategy is wrong or right for all situations. The most important thing is whether or not your method works to reduce the effects of stress and change for you. Coping strategies and tactics can be divided into two types: (1) *adaptive* tactics are those which are successful for you and (2) *maladaptive* tactics are those which somehow don't seem to work out right for you.

Adaptive Coping. There are many kinds of stresses and changes in your life which you deal with successfully. If you think about what you do in such situations, you will observe yourself coping adaptively by meeting a problem head on rather than putting it off, by getting good advice, and by being able to relax and take a break in times of great stress. Adaptive coping is a creative defense mechanism that seeks to fulfill, not merely protect, a person. When your coping skills are successful you come away from the situation with the feeling that you have mastered it, that you have done the right thing, and that the situation has in fact been dealt with properly. Adaptive coping reduces anxiety and increases confidence in being able to deal with stress effectively.



Maladaptive Coping. A response to challenge or stress that works neither to reduce anxiety nor to resolve the situation at hand is maladaptive coping. Like virtually everyone else who has ever lived, you can find instances of maladaptive coping in your life, such as going on a binge and eating or drinking too much, getting angry and losing control and self-respect, avoiding responsibility, or becoming withdrawn and feeling bitter without discussing your problem. Instead of getting you in touch with help, maladaptive coping strategies often isolate you and compound your problems. In addition, continued maladaptive coping can lead to some of the same effects as *chronic stress* (see page 10 for a detailed discussion).

WHY IT MATTERS: The degree to which you successfully cope with stress and change can have a profound effect on your mental well-being and physical health. As you know from the section on stress, the consequences of continued maladaptive coping can be very serious. At best, maladaptive coping is associated with continued anxiety in the face of a stressful situation that has not been resolved. At worst, chronic stress may lead to exhaustion and breakdown. Adaptive, successful coping is a way of making the best of a situation and getting what you want out of life.

WHAT YOU CAN DO: Remember that your coping style and skills are *learned* to a great extent and, if you need to, you can continue to learn better ways of coping. Like other aspects of managing your health, you can control the way you cope with stress and change. You need to become aware of your own patterns of adaptive and maladaptive coping.

The strategies that work for you are a continuing source of strength; the ones that don't are an opportunity for change. If you frequently use maladaptive methods, concentrate on finding adaptive coping strategies. Learn from your family and friends. How do other people successfully cope with stress and change? Try out ways that seem to work for others.

Problems usually don't go away by themselves. Be active and decisive in coping with them.

If you feel the need to learn new ways of coping, you may want to consult a professional counselor.

I. INTRODUCTION

II. NUTRITIONAL NEEDS

A. What is good nutrition?

B. Guidelines for a Healthy "Prudent" Diet

1. Eat enough calories to attain and maintain desired body weight.

2. Eat a balanced diet and a variety of foods at each meal.

3. Establish consistent eating patterns, ie. 3 meals a day.

4. Eat fewer foods high in cholesterol.

-sources: egg yolks, organ meats, crawfish, dairy and meat products.

5. Eat fewer foods high in fat.

-sources: dairy and meat products, nuts, seeds, oils
-"hidden" fats: meat, cheese, processed foods, avocado, sauces, salad dressings
-relation to obesity, atherosclerosis, colon and breast cancer

6. Substitute polyunsaturated fats for saturated fats whenever possible.

-sources of saturated fats: dairy and meat products (esp. bacon and hot dogs), chocolate, coconut and palm oils.
-sources of polyunsaturated fats: vegetable oils and margarines (esp. tub margarines), nuts, avocados
-P/S ratio (goal: ≥ 1.0)
-relation to serum cholesterol and triglycerides

7. Eat more complex carbohydrates and less refined, simple sugars.

-complex carbohydrates: fresh fruits and vegetables, wholegrains
-simple sugars: sugar, cokes, candy, processed foods and beverages
-importance of complex CHO: vitamins, minerals, energy, fiber, water, low calorie density
-relation of complex CHO and fiber to disease:
  -diabetes:
  -colon cancer:
  -tooth decay:
  -cardiovascular disease:

8. Increase dietary fiber.

-sources: bran, wholegrains, raw fruits and vegetables (including peels, seeds, stringy fibers, nuts, kernel, jams and jellies.
-relation to irritable bowel, diverticular disease

9. Drink 6-8 glasses of water a day.

   -sources: water, juice, milk, all beverages, fruits, vegetables
   -importance: regulation of internal environment (temperature, electrolytes, processes)
   -relation to: heat stroke, heat exhaustion
   -adult requirement: 1 ml/kcal consumed, min. 1.5 liters/day

10. Avoid excessive dietary sodium.

   -sources: salt, pickles, luncheon meats, hot dogs, ham, bacon, cheeses, processed foods, snack foods (chips, crackers, dips, popcorn, pretzels), canned soups and vegetables, sauces

11. Meet your requirements of all nutrients.

   -protein: 10-15% of calories (RDA=.8 gm protein/kg body weight)
   -carbohydrates: 50% of calories (min. 100 gm/day)
   -fats: 30-35% of calories (min. 15-25 gm/day)
   -vitamins and minerals
      Supplements
      Vitamins A, D, C
      Calcium, Iron, Sodium

Daily

} Provided from well balanced meals, with possible supplement of a daily multivitamin.

C. The Revised United States Dietary Goals (1978)

1. To avoid overweight, consume only as much energy (calories) as is expended; if overweight, decrease energy intake, and increase energy expenditure.

2. Increase the consumption of complex carbohydrates and "naturally occurring" sugars from about 28% of energy intake to about 48% of energy intake.

3. Reduce the consumption of refined and processed sugars by about 45% to account for about 10% of total energy intake.

4. Reduce overall fat consumtion from approximately 40% to about 30% of energy intake.

5. Reduce saturated fat consumption to account for about 10% of total energy intake: and balance that with poly-unsaturated and mono-unsaturated fats, which should account for about 10% of energy intake each.

6. Reduce cholesterol consumption to about 300 mg per day.

7. Limit the intake of sodium by reducing the intake of salt to about 5 g per day.

PHASE I CHANGES

A. Saturated-Fat and Cholesterol Control

1. Reduce weekly servings of whole milk, cheese (other than low-fat cottage cheese), fatty meats (beef, lamb, bacon, spareribs, sausage, and luncheon meats), and ice cream by one-half (e.g., from the U.S. average of 24 servings a week to about 12 per week). Substitute complex-carbohydrate foods and foods such as fish and poultry in their place. (Do not eat chicken skin.)

2. Change from ice cream to ice milk and from whole milk to nonfat milk. (Infants should preferably be breast-fed. If infants are formula-fed, use the "natural" low-sodium varieties that have recently become available. If they are given cow's milk, use whole milk only up to the age of one year.)

3. Reduce meat fat by trimming and by broiling or roasting instead of frying.

4. Eliminate, except for rare use, intake of organ meats such as liver, sweetbreads, and brains.

5. Change from butter or hard margarine (made with hydrogenated oil) to soft tub margarine (made with unhydrogenated oil).

6. Change from lard or shortening to unhydrogenated vegetable oil, including olive oil if desired. (Although some nutritionists recommend use of the most highly polyunsaturated oils, I feel that any type of vegetable oil other than palm or coconut oil [the only saturated fats that are liquid at room temperature] is acceptable. Healthy cultures have used olive oil, a monosaturated oil, successfully for thousands of years.) Avoid use of large amounts of vegetable oils, as you want to lower your total fat intake in Phase I from the current U.S. average of 40 percent to about 30 percent of total calories consumed.

7. Reduce consumption of egg yolks to no more than four a week. Use egg whites liberally.

8. Change from creamy peanut butter made with hydrogenated fat to natural peanut butter made without hydrogenated fat.

9. Reduce consumption of fast foods, processed and convenience foods, commercial baked goods, and the like.

B. Sugar Control

1. Reduce consumption of soft drinks by half. Limit intake to two or three a week.(U.S. average is five 12-ounce cans or bottles a week.)

2. Gradually eliminate use of sugar in coffee or tea and on fruit. (Saccharin use is discouraged, not only because of its possible role as a carcinogen but also because of the importance of retraining your palate to lowered sweetness levels.)

3. Switch from heavy to light syrup in canned fruits.

4. Substitute fruit for pastry, cake, pie, or other sweets in one-third of all desserts.

C. Salt and Caffeine Control

1. Eliminate, except for rare use, high-salt items such as bacon, ham, sausage, frankfurters, luncheon meats, salted nuts, sauerkraut, pickles, canned soups, canned vegetables, potato chips, and other salted snack foods.

2. Switch from regular table salt to a light salt (one-half sodium chloride, one-half potassium chloride).

3. Gradually decrease salt use in cooking to about one-third previous levels; simultaneously decrease, and eventually eliminate, salt use at the table.

4. Explore the use of other flavors in your cooking - spices, herbs, lemons, wine, vinegar, etc.

5. Limit intake of caffeinated drinks (coffee, tea, cola, etc.) to four cups a day. Try decaffeinated alternatives and herb teas.

D. Complex-Carbohydrate and Fiber Control

1. Increase intake of complex-carbohydrate foods - including legumes (e.g., beans, peas, lentils), starchy root vegetables such as the potato, as well as other vegetables and fruits - as a partial or full caloric replacement (depending on weight-control needs) for reduced intake of sugar and fatty animal foods.

2. Gradually introduce lightly milled or whole-grained cereals into your food plan (e.g., whole-wheat bread and flour, bulgur, couscous, cracked wheat, rolled oats, rye, brown rice, etc.).

3. Increase intake of whole fruits (fruit juices lack much of the fiber contained in whole fruits).

4. Increase intake of whole vegetables (vegetable juices lack much of the fiber contained in whole vegetables and often contain significant amounts of added salt.)

E. High -Caloric-Density Food Control

1. Reduce intake of HCD foods by one-third (e.g., from average U.S. number of 15 portions per day to about 10 per day). By doing this, you will also reduce your intake of salt, sugar, and saturated fat.

2. Partially or fully replace such foods with complex carbohydrates (depending on weight-control goals).

F. Alcohol Control

1. Because alcohol may add to weight-control problems and may displace valuable nutrients, limit alcohol consumption so that no more than 10 percent of your total calorie intake is derived from alcohol, e.g., approximately two bottles of beer (24 oz.) or three glasses of wine (9 oz.) or two cocktails (3 oz. liquor) per day.

PHASE II CHANGES

A. Saturated-Fat and Cholesterol Control

1. Reduce servings of cheese (other than low-fat cottage cheese), red meat, egg yolks, ice cream, and milk (other than nonfat) to eight servings per week.

2. Further reduce use of processed and convenience foods that contain saturated fats.

B. Sugar Control

1. Eliminate, except on rare occasions, intake of soft drinks.

2. Use water-packed canned fruit (rather than fruit canned in light syrup.)

3. Substitute fruit for pastry, pie, etc., for two-thirds of all desserts.

C. Salt and Caffeine Control

1. Eliminate almost all salt in cooking of vegetables; substitute other seasonings. Avoid other high-sodium seasonings such as celery salt, onion salt, garlic salt, steak sauce, soy sauce, and packaged dry mixes. (These changes should allow you to reduce your salt intake to about four grams a day.)

2. Develop a list of no-salt-added alternatives to some of your usual foods (e.g., peanut butter, mayonnaise, catsup, and canned vegetables come in no-salt or low-salt varieties). Fresh fruits and vegetables are naturally low in salt and should be your primary substitutes.

3. Maintain intake of caffeinated beverages at no more than four cups a day. (Continue to use decaffeinated alternatives and herb teas.)

D. Complex-Carbohydrate and Fiber Control

1. Increase intake of whole-grained breads, cereals, fruits, and whole vegetables to at least five servings per day.

2. About one-half of fruit juices should contain pulp (e.g., whole citrus juice, unfiltered apple juice, etc.).

E. High-Caloric-Density Food Control

1. Further reduce intake of HCD foods to seven per day.

2. If you are working on a weight-control program (see Chapter 7), plan to reduce your remaining excess weight by one-half.

F. Alcohol Control

1. Maintain your alcohol consumption at no more than 10 percent of your total caloric intake, as in Phase I.

PHASE III CHANGES

A. Saturated-Fat and Cholesterol Control

1. Reduce servings of cheese (other than low-fat varieties), red meat, egg yolks, ice cream, and milk (other than non-fat) to five per week.

2. Continue to be alert to hidden sources of saturated fat in restaurant meals, commercial baked goods, and convenience foods.

B. Sugar Control

1. Use fruits or fruit/nut combinations as your predominant dessert fare. Experiment with combinations of dried or fresh fruits, nuts, and whole-grained cereals for breakfast, lunch, and snacks.

2. Use small amounts of honey in place of table sugar.

C. Salt and Caffeine Control

1. Continue to seek out and eliminate hidden sources of excess salt.

2. Eliminate use of salt in cooking, except on rare occasions.

3. Eliminate use of convenience foods, except on rare occasions.

4. Drink no more than two cups of coffee or tea a day. Continue to use herbal teas.

D. Complex-Carbohydrate and Fiber Control

1. Have at least seven servings a day of fruit, vegetables, whole-grained or lightly milled cereals (brown rice, whole wheat, bulgur, and couscous), and legumes. Experiment with new recipes using such foods.

2. Drink fruit juices with pulp.

E. High-Caloric-Density Food Control

1. Reduce intake of HCD foods to four or five a day. These foods should be drawn mainly from vegetable sources, preferably from whole foods such as avocados, seeds, adn nuts (including unsalted, natural peanut butter).

F. Alcohol Control

1. Maintain your alcohol consumption at 10 percent or less of your total caloric intake, as in Phases I and II.

EXERCISE

WHAT IT IS: Walking or swimming may *not* be exercise for some. Exercise is activity that increases the heart rate or pulse. To benefit from exercise you must engage in an activity that raises your pulse to about 120 beats per minute. Walking or swimming counts as exercise only if it increases your pulse rate sufficiently.

WHAT IT DOES: Exercise can be fun and healthy. If done regularly, it will increase your sense of well-being and help you meet the stress of day-to-day events. A moderate amount of exercise leads to a slowing of the resting pulse rate, a stronger heart beat, an improvement in the flow of blood through the heart muscle, an enlargement in the size of the coronary arteries, an increased level of high density lipoproteir a lowering of blood pressure, and an increase in auxiliary blood vessels which feed the heart.

WHY IT MATTERS: Exercise makes you feel good, but does it actually reduce your chances of illness or premature death? Research increasingly suggests that exercise does lead to better health.

Exercise and Heart Disease. It is becoming clear that a regular pattern of vigorous exercise lowers your risk of dying from a heart attack. People who have strenuous jobs have about half the risk of getting a heart attack as sedentary workers. More recently it has been shown that vigorous leisure time exercise—activity such as lap swimming or jogging, intense enough to expend 2000 calories of energy per week—offers protection against heart attacks.

Exercise and Obesity. Consuming too many calories and expending too little energy results in obesity. While food restriction

leads to weight loss at the expense of both fat and muscle tissue, sufficient exercise appears to cause weight loss primarily from fat stores. Exercise, therefore, is an excellent way of preventing or reducing obesity.

Exercise and Mental Health. People who exercise regularly experience an increased awareness, a greater power of concentration, and a feeling of general well-being. They do not tire as easily as inactive people. Vigorous exercise has also proved to be effective in reducing tension and stress. Recently, regular exercise programs such as jogging have been used successfully to help people deal with depression.

WHAT YOU CAN DO: On the next page you will learn how the amount of exercise you do affects your health and how you compare with others. Use this information to decide whether you want to increase your current exercise level and how you wish to do this.

Before changing your exercise program, check your fitness level. Are you presently under medical care for any disease or condition? Do you have high blood pressure? Do you frequently experience chest pains or dizziness? Do you know of any other reasons for not beginning a program of more vigorous activity? If you answered yes to any of these questions, it is important to see your doctor before increasing your exercise level significantly.

There are many different ways to exercise and many books available to help you. Some exercise you take alone, while some can be done in the company of others. Some requires a considerable investment of time and money and others don't cost a penny. Decide what suits *you* best. It is more likely you will continue with it.

Exercise doesn't have to hurt to be good for you. Choose activities you enjoy. Regular exercise will help to keep you healthy and energetic, as well as help to prevent heart disease.

CIRCUIT (POWER) TRAINING

Circuit Training is a relatively new method of physical conditioning originally pioneered at the University of Leeds, England, within the past ten years.

Circuit Training is the scientific arrangement of known and proven exercise designed to elicit maximum overall training effectiveness. Circuit training has as its objective the development of muscular and circulo-respiratory fitness. It aims at the development of all-around fitness rather than the fitness required for any particular game or activity. It is based on sound physiological principles and aims at the kind of varied activity and continuous challenge which are attractive to larger numbers of boys and men, many of whom show little enthusiasm for ordinary forms of physical training. This form of training has three characteristics:

(1) It improves both muscular and circulo-respiratory fitness.

(2) It applies the principle of progressive resistance.

(3) It enables large numbers of performers to train at the same time, each according to his individual capacity, and acquiring a maximum workout in a relatively short period of time.

Circuit Training courses are most economical and can be developed around many varieties of training apparatus by anyone with a sound knowledge of the techniques and physiology of physical conditioning. According to all available reports this is one of the most popular methods of physical conditioning. The following factors appear to account for this popularity:

(1) Everyone has the satisfaction of a bout of hard physical activity in a very short period of time (according to university studies, as little as ten minutes a day produces excellent results).

(2) Everyone works at a rate which is suited to him. He is fully extended but not overtrained.

(3) Trainees know in advance what they are to do. Weaker trainees can work independently among the best performers.

(4) Instructor supervision is not required. The circuit gym can be organized to provide maximum training effectiveness through fully self-directed programming.

(5) The circuit layout inspires motivation. The movement from one station to another introduces an element of variety which is missing from a sequence of exercise performed in one location.

(6) Each trainee assesses his own improvement and adjusts the intensity of his circuit according to his rate of progress.

It is a method whereby the monotony and drudgery of physical training can be greatly reduced; it is a flexible training technique that can employ an interesting variety of effective exercises rather than standardized movements of bygone days; and it is a method of training that is achieving wide prominence because of its ability to produce physically hardened individuals in a minimum amount of training time.

IMPORTANT

The effectiveness of this program is directly proportional to the degree to which the following principles are observed:

Regularity: The program should be conducted three times a week at a minimum.

For Strength Improvement: Individuals must extend themselves at each station by working at the highest possible stress level for the one minute period.

For Muscular Endurance: On station, exercise repetitions must be executed at a continuous pace with no rest or pause between repetitions. Adhere as closely as possible to the "Cadence Count" given for each exercise.

For Cardio-vascular Improvement: Cardio-vascular improvement depends on a minimum of 20-30 minutes of continuous exercise activity, which may include alternating the pace between vigorous and moderate exertion. The exercise pace on this course must be continuous with no rest pauses except when the individual may reach his limit on a particular station. Both circuit and interval portions are designed to include an alternating pace of vigorous and moderate exertion.

For Flexibility: The execution of all circuit exercises, particularly those with weights, must be performed in such manner as to insure full extension and contraction of the muscle groups involved.

On the Universal Gym it is relatively easy to establish your Circuit Training Program. The ideal direction to follow is clock-wise, for example:

1. Bench press
2. Sit-ups (abdominal board, bent knees)
3. Dips (dipping station)
4. Leg press
5. Lat pull down
6. Curls (low pulley station)
7. Hip flexors (arms straight) knees to chest
8. Back arch
9. Shoulder press
10. Leg extension
11. Neck station
12. Chinning station
13. Leg curl
14. Wrist curl

Exercises should be performed as quickly as possible to achieve Aerobic training effect. Proper value, however, can only be achieved if each repitation is performed full its full range of motion.

WEIGHT TRAINING

PROGRAM STEPS

1. Select Exercises
2. Determine 1 maximum repetition for each
3. Determine 40% of 1 repetition maximum for each - this will be the Training weight
4. Perform each exercise for 12-15 repetitions (MAX 30 seconds between stations)
5. Do a set of exercises at least 3 times a week (1 day rest in between)
6. Add 2-3 sets after 2 weeks
7. Retest every 4 weeks and add weights

EXERCISE	1 MAX	1	2	3	4

Health Self Appraisal

I CORONARY HEART DISEASE (CHD) RISK FACTORS

Cholesterol and Triglycerides

CHOLESTEROL less than 160 HDL more than 70 TRIGLYCERIDES less than 60	CHOLESTEROL 160-200 HDL 50-70 TRIGLYCERIDES 60-100	CHOLESTEROL 200-240 HDL 40-50 TRIGLYCERIDES 100-140	CHOLESTEROL 240-280 HDL 30-40 TRIGLYCERIDES 140-180	CHOLESTEROL more than 280 HDL less than 30 TRIGLYCERIDES more than 180 mg%
+2	+1	0	-1	-3

Blood Pressure: Systolic/Diastolic

110 systolic	110-130 50-90	130-140 90-100	140-170 100-110	170 more than 110
+1	0	-1	-2	-4

Smoking

Never used	Quit	Cigar, pipe, or close family member smokes	One pack of cigarettes daily	Two or more packs daily
+1	0	-1	-3	-5

Heredity

No family history of CHD	One close relative over 60 with CHD	Two close relatives over 60 with CHD	One close relative under 60 with CHD	Two or more close relatives under 60 with CHD
+2	0	-1	-2	-4

Body Weight (or fat)

5 lbs. below desirable weight	-5 to +4 lbs. desirable weight	5 to 20 lbs. overweight	20 to 35 lbs. overweight	35 lbs. overweight
less than 10% fat--men; less than 16% fat--women	*10-15% fat--men; 16-22% fat--women*	*15-20% fat--men; 22-30% fat--women*	*20-25% fat--men; 30-36% fat--women*	*25% fat--men; 35% fat--women*
+2	+1	0	-2	-3

Sex

Female under 45 years	Female over 45 years	Male	Stocky male	Bald, stocky male
0	-1	-1	-2	-4

Stress

Phlegmatic, unhurried, generally happy	Ambitious, but generally relaxed	Sometimes hard driving, time conscious competitive	Often hard driving, time conscious, competitive	Always hard driving, time conscious, competitive
+1	0	-1	-2	-3

Physical Activity

Intensity--high duration--long 30 minutes, frequency--daily	Intermittant 20-30 minutes 3-5 times/wk	Moderate 10-20 min., 3-5 times/wk	Light 10-20 minutes, 1-2 times/wk	Little or none
+3	+1	0	-1	-3

TOTAL: I (CHD) RISK FACTORS

II HEALTH HABITS (associated with good health and longevity)

Breakfast

Daily	Sometimes	None	Coffee	Coffee and donut
+1	0	-1	-2	-3

Regular Meals

3 or more	2 daily	Not regular	Fad diets	Starve and stuff
+1	0	-1	-2	-3

Body Weight, Smoking, Physical Activity (previously considered in Part I, CHD)

Sleep

7-8 hours	8-9 hours	6-7 hours	9 hours	6 hours
+1	0	0	-1	-2

Alcohol

None	Occasional social drink	1-2 drinks daily	2-6 drinks daily	6 drinks daily
+1	+1	0	-2	-4

TOTAL: II HEALTH HABITS

III MEDICAL

Medical Exam and Screening Tests (blood pressure, diabetes, glaucoma)

Regular tests, see doctor when necessary	Periodic medical exam and regular tests	Periodic medical exam	Sometimes get tests	No test or medical exams
+1	+1	0	0	-1

Heart

No history--self or family	Some history	Rheumatic fever as child, no murmur now	Rheumatic fever as child, have murmur	Have ECG abnormality and/or angina pectoris
+1	0	-1	-2	-3

Lung (including pneumonia, TB)

No problem	Some past problem	Mild asthma or bronchitis	Emphysema, severe asthma or bronchitis	Severe lung problems
+1	0	-1	-2	-3

Digestive Tract

No problem	Occasional diarrhea, loss of appetite	Fequent diarrhea or stomach upset	Ulcers, gall bladder, colitis, or liver problems	Severe gastro-intestinal disorders
+1	0	-1	-2	-3

Diabetes

No problem or family history	Controlled hypoglycemia (low blood sugar)	Hypoglycemia and family history	Mild diabetes (diet and exercise)	Diabetes (insulin)
+1	0	-1	-2	-3

Drugs

Seldom take	Minimal but regularly use aspirin or other drugs	Heavy use of aspirin or other drugs	Regular use of amphetamines, barbiturates or psychogenic drugs	Heavy use of amphetamines, barbiturates, or psychogenic drugs
+1	0	-1	-2	-3

TOTAL: III MEDICAL

IV SAFETY

Driving in Car

4000 mi/yr mostly local	4000-6000 mi local & some highway	6000-8000 mi local and highway	8000-10,000 highway and some local	10,000 mi mostly highway
+1	0	0	-1	-2

Using Seat Belts

Always	Most of the time (75%)	On highway	Seldom (25%)	Never
+1	0	-1	-2	-3

Risk Taking Behavior (motorcycle, skydive, mountain climb, fly small plane, etc.)

Some with careful preparation	Never	Occasionally	Often	Try anything for thrills
+1	0	-1	-1	-2

TOTAL: IV SAFETY

V PERSONAL

Diet

High complex carbohydrates and low refined sugar	Balanced moderate fat and refined sugar	Balanced typical fat and sugar	Fad diets	Starve and stuff
+1	0	-1	-2	-3

Longevity

Grandparents lived past 90; parents past 80	Grandparents lived past 80; parents past 70	Grandparents lived past 70; parents past 60	Few relatives lived past 60	Few relatives lived past 50
+2	+1	-1	-2	-3

Love and Marriage

Happily married	Married	Unmarried	Divorced	Extramarital relationship
+2	+1	-1	-2	-3

Education

Post graduate or master craftsman	College graduate or skilled craftsman	Some college or trade school	High school	Grade school
+1	+1	0	-1	-2

Job Satisfaction

Enjoy job, see results, room for advancement	Enjoy job, see some results, able to advance	Job OK, no results, no where to go	Dislike job	Hate job
+1	+1	0	-1	-2

Social

Have some close friends	Some friends	No good friends	Stuck with people I don't enjoy	No friends at all
+1	0	-1	-2	-3

Race

White or Oriental	Black or Hispanic	American Indian
0	-1	-2

TOTAL: V PERSONAL

VI PSYCHOLOGICAL

Outlook

Feel good about present and future	Satisfied	Unsure about present or future	Unhappy in present, don't look forward to future	Miserable, rather not get out of bed
+1	0	-1	-2	-3

Depression

No family history of depression	Some family history--I feel OK	Family history and I am mildly depressed	Sometimes feel life isn't worth living	Thoughts of suicide
+1	0	-1	-2	-3

Complete the following pages and then fill in the boxes below.

I	(CHD) Risk Factors	☐
II	Health Habits	☐
III	Medical	☐
IV	Safety	☐
V	Personal	☐
VI	Psychological	☐
VII	For Women Only	☐

LIFE EXPECTANCY

Nearest Age	Expectancy
30	74
35	74
40	75
45	76
50	76
55	77
60	78
65	80
70	82

total		life expectancy		longevity estimate
☐	+	☐	=	☐

BASED ON CURRENT BEHAVIOR AND HEALTH HABITS

NOW: Go back and see how you can add years to your life by improving behaviors and lifestyle. Check each category for possible changes you would like to make in your current lifestyle.

I	(CHD) Risk Factors	☐
II	Health Habits	☐
III	Medical	☐
IV	Safety	☐
V.	Personal	☐
VI	Psychological	☐
VII	For Women Only	☐

LIFE EXPECTANCY

Nearest Age	Expectancy
30	74
35	74
40	75
45	76
50	76
55	77
60	78
65	80
70	82

total		life expectancy		longevity estimate
☐	+	☐	=	☐

BASED ON CHANGED BEHAVIOR AND HEALTH HABITS

HEALTH SELF-APPRAISAL REPORT

THE HEALTH CORPORATION

MR SAMPLE MAN

[redacted]

WASHINGTON DC 20011

This is my code number ID# - CCCCCCCCC

This number should appear on every right-hand page of this report. If it does not appear correctly or if you or your physician have questions about your report, please call toll-free 800-424-8894. District of Columbia residents call 872-8210.

YOUR HEALTH SELF-APPRAISAL REPORT: WHAT IT IS

Not long ago, you began a process of self-inquiry into your health behavior and life-style by filling out a questionnaire. That questionnaire was the first step in your study of the three principal aspects of your health: (1) *mental well-being*—how you compare with others in the areas of stress, coping, and social support; (2)*mortality and morbidity risk*—weaknesses and strengths in your risk profile; and (3) *health attitudes*—the likelihood that you will take action to prevent illness and stay healthy.

This book contains your personal, computer-generated Health Report, and is based on the completed questionnaire that you sent to The Health Corporation. Your Health Report will help you understand what your chances are of staying healthy or becoming ill.

THE PREPARATION OF YOUR HEALTH REPORT. The Health Corporation has followed rigorous standards in preparing your Health Questionnaire and Health Report and in deciding which aspects and measures of your health should be included.

Only those risk indicators are included for which there is a sound scientific basis in linking them with a disease or cause of death.

All descriptions of the health factors contained in your Report have been documented and are based on up-to-date research findings.

Every effort has been made to control error in the processing of your Questionnaire and in the printing of your Health Report.

The Health Corporation is committed to maintaining the confidentiality and privacy of the information you provided in your Health Questionnaire. When your completed Health Questionnaire was received at the processing center, your answers were entered into the computer and your name was replaced by a code number to safeguard the confidentiality of your information.

The data were subjected to several kinds of analyses, including risk computations using large data bases and comparisons of your scores to national norms and to existing norms for others like you. (See page 4 for more information on how your results were obtained.) The computer was used to process the information.

Your results are contained in this Report. The right-hand pages of your Report contain computer-printed, personal results which let you know where *you* stand in major health areas. The left-hand pages contain corresponding background information for that particular health area—a description of the health factor, how it works to influence your health and risks, why it is important, and, most importantly, what you can do about it.

Following are some concepts and definitions that you will need to know in order to fully understand your Health Report.

A *risk indicator* is a characteristic with consequences for risk. For example, lack of exercise is a risk indicator that increases the risk of heart disease. Frequent, vigorous exercise is a risk indicator that decreases the risk of heart disease.

A *risk factor* is the quantitative weight attached to a risk indicator to describe the amount that indicator increases or decreases risk of death or disease.

A *mortality risk* is the number of deaths in a group of people in a given period of time.

A *morbidity risk* is the number of cases of disease in a group of people in a given period of time.

MY HEALTH SELF-APPRAISAL REPORT

TABLE OF CONTENTS

SAMPLE MAN

Sometimes answers to some questions are missing. If you failed to provide answers to all questions, or perhaps placed your answers in the wrong position, the computer would not have been able to complete that section of your report. The interpretation of your results may, in that case, be left out of the report or confined to the information you did provide. You can see below if there were sections in which your responses were incomplete.

I completed all questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I completed all questions for this section.
However, my blood pressure value is approximated.

I completed the questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I did not complete all questions for this section.

I completed all questions for this section.

I completed all questions for this section.

I did not complete all questions for this section.

I did not complete all questions for this section.

I completed all questions for this section.

I will be able to read about what a good job I am doing to improve my health on these pages.

DATE OF REPORT: DEC 30, 1979

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IMPORTANT BACKGROUND INFORMATION

YOU CAN DO SOMETHING TO CHANGE YOUR HEALTH

There are four major factors that influence your health:

Biology. Biological factors are those aspects of physical and mental health that relate to your biology, heredity, maturation, and aging. There is very little anyone can do to control or change these influences.

Environment. Environmental factors are those aspects over which you alone have very little control, but may change by working with society. They include things like air pollution and cancer causing substances in food or in the workplace.

Health Care Services. The availability, quality, and cost of health care services are important influences on your health status.

Life-Style. Those activities and decisions that affect your health and that are under your control fall into the category of life-style. Your Health Questionnaire and Report focus on these aspects of your health over which you have some control, such as smoking, depression, lack of exercise, or high blood pressure. The table below shows that life-style has a great impact on the leading causes of death.

ESTIMATED PERCENT CONTRIBUTION TO CAUSE OF DEATH

10 Leading Causes of Death	Life-Style	Environment	Health Care Services	Biology
Heart Disease	54	9	12	25
Cancer	37	24	10	29
Motor Vehicle Accidents	69	18	12	1
All Other Accidents	51	31	14	4
Stroke	50	22	7	21
Homicide	66	41	0	2
Suicide	60	35	3	2
Cirrhosis	70	9	3	18
Influenza/Pneumonia	23	20	18	39
Diabetes	26	0	6	60
All Ten Causes Together	51	19	10	20

(Source: Center for Disease Control, Atlanta 1978)

Notice that in eight out of ten instances the factors contributing to death are life-style related. You can control and change these factors. Use your Health Report to pinpoint your greatest risks and strengths.

HOW YOUR HEALTH REPORT RESULTS WERE OBTAINED

Mental Health. The questionnaire consists of 5 scales which were selected on the basis of their relevance and methodology. Your score is compared to a norm, either to national norms, as in the General Well-Being Schedule, or to the norms for your group. Your Mental Health Results are shown on pages 8-15.

Health Attitudes. Using the Health Belief Model in a questionnaire version designed especially for your Health Report, an assessment is made of your likelihood of taking preventive action against illness. Your score is compared to that of others like you, or the norm for your group. Your Health Attitudes results are shown on pages 40-41.

Morbidity/Mortality. When your health risks are estimated, you are in effect being compared with groups of individuals having similar characteristics whose morbidity and mortality outcomes were investigated in prior epidemiological studies. This comparison is carried out to give you your total risk, your Health Age, and your Life Expectancy.

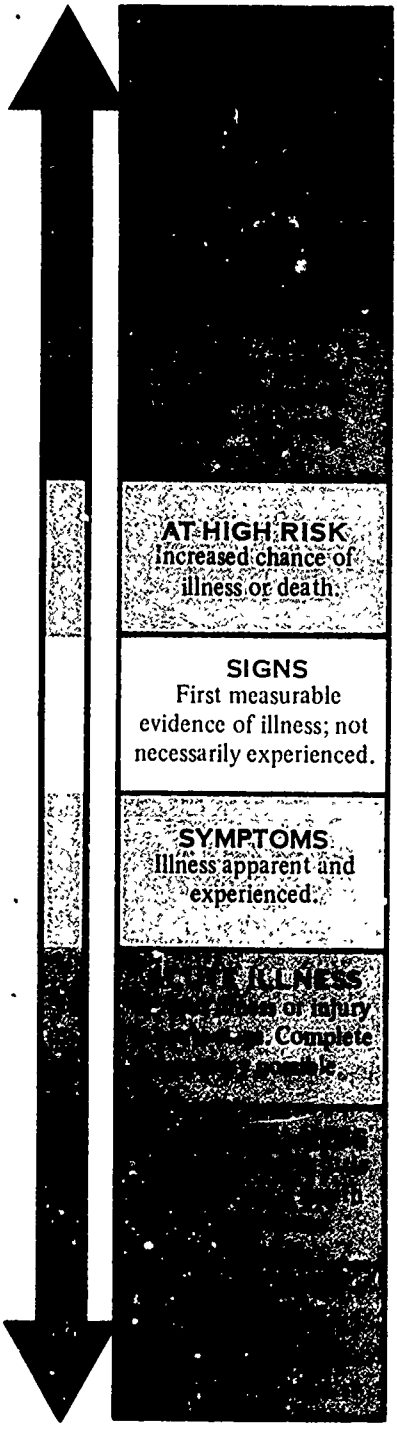
More specifically, the major sources of data that contribute to the morbity and mortality sections of your Health Report are the 20-year Framingham Study which provides data on cardiovascular disease, the 3rd National Cancer Survey which is the source of cancer morbidity data, and data from the United States Vital Statistics. Your Morbidity/Mortality results are shown on pages 16-39.

Before reading the morbidity and mortality sections of your Report, it will be useful for you to know more about the concept of risk.

Risk is a term for the odds that something will or will not happen. It is based on the statistical concept of probability.

A person who is, for example, a heavy smoker or is overweight is said to have high risk characteristics and has a heightened risk of dying from a heart attack. No one knows for sure whether that person *will* die from a heart attack. But it *is* known that people who have such high risk characteristics *do* die from heart attacks at a higher rate than people who don't smoke and have a normal weight.

A statement about risk then is not a prediction about you the *individual.* Statements of risk are about the likelihood of an event like death occurring in a group of people with or without a certain set of characteristics like smoking, being of average weight, or having low blood pressure.



HEALTH is not a well-defined "all-or-nothing" state. The diagram (above) shows how you approach optimal health – by moving through several states away from illness. The more you are positioned at one end of the continuum, the less likely you are to move toward the other end of the continuum.

SPECIAL INTERPRETATIONS OF MY RESULTS

I answered a series of questions which can help me interpret my report. I said I felt I answered most questions as carefully and as realistically as I could. I also said that I anticipated my report would not contain a lot of bad news about my health. I did not expect to learn something new regarding my health from my report.

The confidentiality of your data is protected in several ways. When you received this report, your questionnaire was enclosed. Your health data and your unique code number are stored on one computer tape and your name and code number are stored on another. Computer tapes are stored in locked vaults and can be accessed only through use of a complex logging system monitored by The Health Corporation.

I reported that within the past 12 months I have had stiffness, swelling or aching in a joint or muscle. Because this may reflect a condition requiring medical care, I should consult with my physician if I have not already done so. Because I may have a condition not identified by the health appraisal questionnaire I should make allowances for this possibility in reading my report. I may wish to go over my report with my physician.

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YOUR HEALTH SELF-APPRAISAL REPORT: WHAT IT IS NOT

To fully understand your Health Report, you need to know about what it is not as well as what it is.

YOUR HEALTH SELF-APPRAISAL REPORT IS *NOT* DESIGNED:

- **To give you a diagnosis.** Your doctor gives you a diagnosis when you are sick, which describes the nature, treatment, and prognosis of your illness. Your Health Report focuses on your health and makes you aware of your health risks and strengths so that you can take steps to prevent illness.

- **To predict your future medical history.** If nothing else were known about you but your age, the risk computation program could do no better than print out the average death and disease risks for people your age. If, in addition, the program used information on your sex and race, the risk estimates for you would be the same as those for the average person of your age, sex, and race. The more that is known about your risk-related characteristics, the more precise your risk estimate is going to be. For all such characteristics the program compares the data for people who had the same characteristics in the past with the data for those who did not. Therefore, your risk estimates are based on counts of how often disease and death developed in groups of people with certain characteristics compared to groups of people without them. Given your specific data, the program will tell you not that something *will* happen but what the odds are that it *may* happen. (See page 4 for more information on risk.)

- **To assess risks of getting or of dying from a condition you already have.** Your Health Report does not assess your risk of contracting a disease or of dying from one that you may already have. If, for example, your doctor has told you that you now have heart disease, the estimation of your risk of having a heart attack would not be appropriate. The next page indicates if you reported an existing condition that could influence the interpretation of your Health Report.

- **To give risk factors for rare diseases.** Results are not included which allow you to study your risk of contracting *rare* diseases, or diseases for which risk indicators are unknown or unsubstantiated by research. In addition, where there is a serious question about the reliability of evidence linking a risk indicator with a disease, that risk indicator has not been included.

- **To be used by anyone under age 20.** Although the data bases do contain some information to support risk computation for children, neither the format, the range of risk factors, nor the suggested resources have been targeted for children's needs.

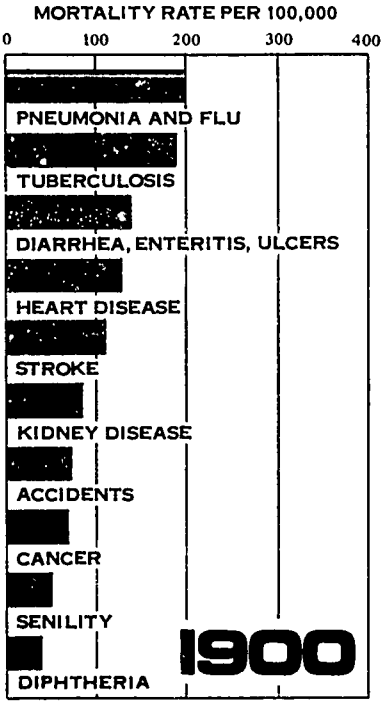
- **To provide a psychiatric diagnosis.** The section on mental health gives you a description of how you compare to others in terms of mental well-being and distress and, if you are distressed, suggests ways of dealing with your lack of well-being.

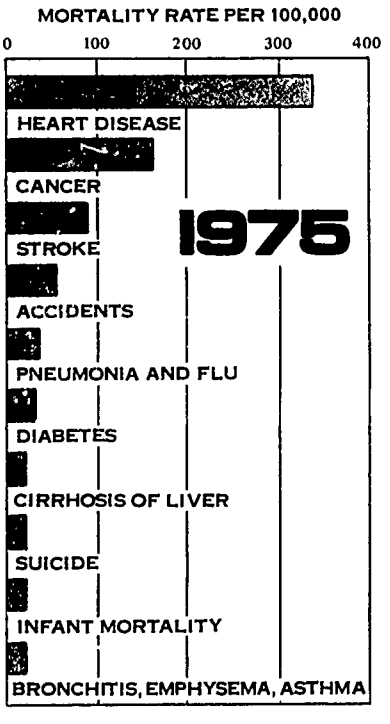
- **To test your medical knowledge.** Your Health Questionnaire was designed to gather the information on the risk-related characteristics needed to estimate your health risks. There are no right or wrong answers. Your answers were appropriate if you selected the responses that best describe you.

- **To tell you how to change your health behavior.** This Report, which helps you to take stock of your health assets and liabilities, is only a first step in deciding what you want to do about your health. Some suggestions are included, but the Report does not contain a detailed program to accomplish your health objectives.

If you decide you want help accomplishing your health objectives, please use the form on page 47 to request additional information.

THE CHANGING PICTURE: LEADING CAUSES OF DEATH 1900/1975





Since 1900, there has been a dramatic decline in deaths from infectious diseases – now the majority of illnesses and deaths are due to *chronic* diseases related to life style and the environment. To improve health *today*, individual action to change behavior and control the effects of the environment is required.

FURTHER INTERPRETATIONS OF MY RESULTS

I reported that I thought that my systolic blood pressure was about normal. A blocd pressure of 125 was used to estimate my risk of heart attack and stroke as well as my health age and life expectancy. I should verify the accuracy of this blood pressure and interpret my results accordingly.

Because I reported that I don't know my cholesterol level, the value <220> was used. This is the average for a man my age.

I reported that I don't know my present high density lipoprotein level (HDL). The value <33> was used since I said that I thought my high density lipoprotein was lower than average. The average for a man my age is 49.

To put my health appraisal into proper perspective a summary table is printed below. It shows my risk in terms of deaths per 100,000 people over the next 15 years compared with the average for my age, race and sex.

CAUSE OF DEATH	MY RISK	AVERAGE	% OF AVERAGE
Heart disease	1672.4	1717.8	97%
Cancer	607.1	973.3	62%
Stroke	154.6	171.4	90%
Car accident	132.4	401.7	33%
Other	1780.9	2214.7	80%
All causes	4347.4	5478.9	79%

+

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GENERAL WELL-BEING

WHAT IT IS: Think of your mental state as a continuum, with intense well-being at one end and profound distress at the other. Most people fall somewhere in the middle. The borderline between well-being and distress is not well defined. In general, however, a person is *distressed* if he/she is unable to cope with the world and feels troubled, anxious, or depressed.

Your general well-being is influenced by many factors including the amount of stress and change in your life, how you cope with it, and what resources you have to turn to for help. You will learn about yourself and these factors in the sections that follow.

WHAT IT DOES: One section of the Health Self-Appraisal Questionnaire asked you to describe your levels of well-being or distress. The questions were developed as part of a nationwide health survey conducted by the National Center for Health Statistics.

The graph on the opposite page shows that most people scored in the positive well-being range. At the time of the survey, most individuals reported a feeling of contentment, control, and calmness. About 25% of those asked, reported feelings of distress. They felt anxious, depressed, out of control, and nervous. A small number of people scoring at the low end of the scale felt so blue that they were considered to be suicidal.

Your feelings of well-being—gloomy or cheerful, hopeless or contented—usually reflect the circumstances in your life and the amount of control you have over events at a particular time. People vary in their ability to deal with frustration, change, chronic stress, and personal loss. Some individuals have a greater ability to bounce back and adapt to change. Others are prone to depression and anxiety in the face of stress or change. Depression is characterized by feelings of sadness, worthlessness, and a lack of energy. If it exists over a long period of time it can be severely disabling. The most serious form of depression places the individual at an increased risk of mental breakdown and even suicide. Serious depression needs prompt treatment.

WHY IT MATTERS: Frequently, information about your health is concerned not so much with how well you are, but with how well you *think* you are. Your mood does fluctuate, however, and you may feel better on one day than another. But your level of general well-being should provide a good indication of your mental health.

A score in the *upper range* of the general well-being scale suggests that you are content and satisfied with your life. Try to find the sources of your contentment so that you can work to nourish and maintain them. Some of your scores may be lower than others. Use them to identify areas you want to work on.

A score in the *distress range* may reflect a crisis or major problem in your life. For example, you may be troubled by marital conflict, by disappointments in your work, or by the illness or death of a loved one. A score in the distress range can also indicate a state of *depression* or *anxiety* or may be related to your *physical health.* Physical and mental distress often go hand-in-hand. A physical illness may be the cause of emotional distress. For example, depression is frequently experienced by those who suffer from a chronic illness. Likewise, emotional distress may bring on a physical complaint such as a headache.

WHAT YOU CAN DO: *If you scored in the distress range,* take some time to reflect on what that score means for you. Do some soul searching. What's behind your distress? Are you getting enough sleep? Do you feel ignored or taken for granted? Are you reacting to bad news? Are you irritated by a family member? How long have you been feeling troubled?

If your feelings of distress persist, you should probably talk the problem over with someone that you trust and you should perhaps seek professional guidance from a family counselor, a psychiatrist, or a mental health center. Problems do not usually disappear by themselves. (See the Resources section in this book for more information on where to turn for help.)

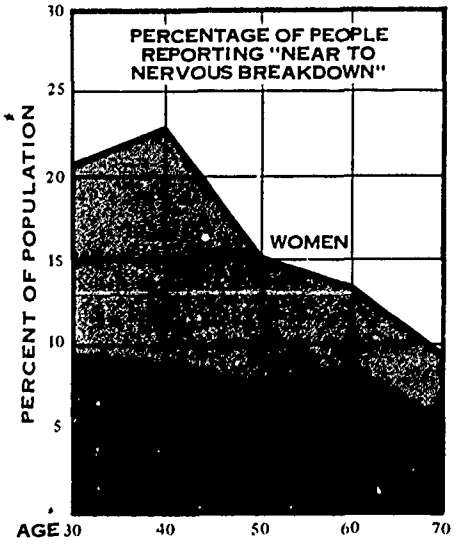
To regain self-esteem, concentrate on something you do well. Indulge your hobby. Give special attention to your skills. Reward yourself. Success even in minor things always makes you feel good.

TO OBTAIN HELP WITH A MENTAL HEALTH PROBLEM

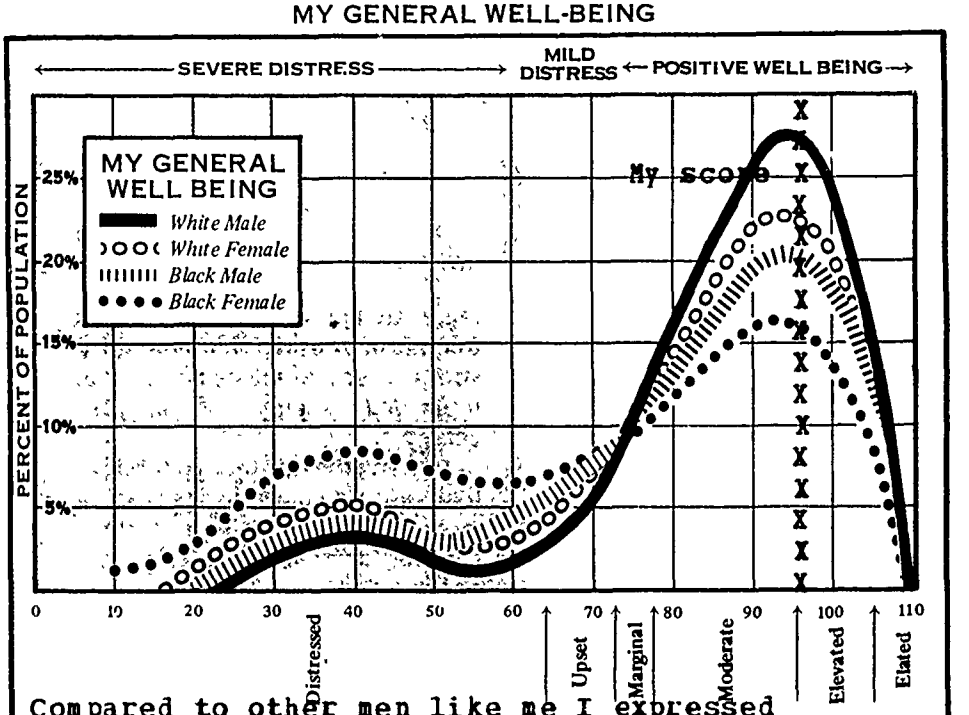
- CONSULT YOUR FAMILY DOCTOR
- ASK AT YOUR LOCAL HOSPITAL
- OBTAIN A LIST OF LOCAL SERVICES FROM THE STATE MENTAL HEALTH DEPARTMENT OR FROM THE STATE OR LOCAL MENTAL HEALTH ASSOCIATION

■ Your scores for six measures of your general well-being are shown at right. The "median" score is the score at which half of all those who have answered the questions scored higher, and half scored lower.

■ A surprisingly high proportion of people reported being "near to nervous breakdown" at some time in the previous year – women with a higher frequency than men.



MY GENERAL WELL-BEING



Compared to other men like me I expressed happiness and contentment, for the most part, with my life recently. I did not report any feelings of distress. Most men my age scored lower than I did on this scale.

MORE WORRIED ABOUT MY HEALTH — Median | My score X — LESS WORRIED ABOUT MY HEALTH

I am not very worried about my health.

LOWER ENERGY LEVEL — Median | My score X — HIGHER ENERGY LEVEL

I tend to have a high energy level.

MORE UNSATISFYING, UNINTERESTING LIFE — Median | My score X — MORE SATISFYING, INTERESTING LIFE

I could be more satisfied by my life.

MORE DEPRESSED MOOD — Median | My score X — MORE CHEERFUL MOOD

I tend to feel cheerful and in good spirits.

MORE TENSE, ANXIOUS — Median | My score X — MORE RELAXED

I tend to be relaxed and free from strain.

MORE OUT OF CONTROL OF MYSELF — Median | My score X — MORE IN CONTROL OF MYSELF

I feel in control and sure of myself.

ACTION: List the things in my life which contribute most to my well-being and consider ways to ensure my continued well-being.

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STRESS

WHAT IT IS: You have just retired or have just been promoted, you are about to give birth or are about to have surgery, you have just made or have lost a lot of money—all of these are stressful situations. A stressful situation is one that threatens the balance and order a person works to establish and maintain. To maintain balance you must continuously adjust to change and to stressful, undesirable situations by altering yourself or by modifying your surroundings.

A *stress* is an event or a sequence of events, often unpleasant, that calls for a change on your part. Your mind's and your body's state of alertness and preparedness for action is a *stress reaction* or a strain.

WHAT IT DOES: The body reacts to stress with a pounding heart, a knotted stomach, nervousness, a rise in blood pressure, heavy breathing, and sweating. Authorities on stress describe three stages of adaptation to stress. First your body reacts with alarm. This is followed by the second stage, a period of adjustment or resistance to the stress. If your adjustment to stress is not successful, you may eventually reach the third stage of exhaustion.

In the first stage, tension and anxiety increase, your pulse rate quickens, your muscles are supplied with oxygen, your blood sugar level increases, your pupils become dialated, your rate of digestion decreases, and your perspiration increases.

Normally in the second stage, your body functions become stable and your anxiety diminishes as you deal with the stress. If the stressful situation should continue, however, your body's continued arousal and readiness for action may be damaging. Although you have an ability to tolerate a considerable amount of stress, your body does not have an *unlimited* supply of adaptive energy.

You run the risk that your body's temporary changes in response to stress may become permanent. Chronic stress leads to exhaustion or breakdown.

WHY IT MATTERS: It is at this point of physical or mental exhaustion that some of the very detrimental effects of stress are seen. Chronic stress can lead to a variety of problems.

Just one so-called stress disease, peptic ulcer, affects 5 million Americans and ranks among the leading causes of death in the United States. People with very stressful jobs are likely to suffer such diseases as peptic ulcer or hypertension several times as often as those in less stressful jobs

Stress also seems to contribute to the risk of having a heart attack and a stroke. See Type A behavior on page 26 for more information.

Backaches, headaches, sexual problems, and problems with sleep are other common reactions to chronic stress. Victims of continued stress suffer from acute distress, nervousness, and depression, often so serious that the ability to cope with even small changes and tasks is impaired.

WHAT YOU CAN DO: Reactions to stress are highly individual. Some people have a unique capacity to tolerate stress while others are very vulnerable to it. Events that are highly stressful for you may not even be considered unusual by another person. Chances are though that many stresses and changes will be difficult for anyone to handle. Check the next page to compare the number of life changes that you have had to make in the past year to the number that others have adjusted to.

Take action to reduce the frequency of the stressful situations that you *can* control. As for the others, learn to cope adaptively and take action to avert the harmful disease-related effects of chronic stress.

Learn to recognize your particular stress signs.

Pinpoint your sources of chronic stress and try to bring them under control. A problem resulting from stress is not usually the result of a *situation* but of how you *cope* with that situation.

Learn to know when to fight and when to give in.

Make a list of the special ways of coping that work for you and reduce the harmful effects of stress.

Events which cause change and which are undesirable are often very stressful. Below are some which are known to be associated with increased strain. I reported the events checked below.

Death of spouse .....
Divorce .....
Marital separation .....
Jail term .....
Death of close family member ...
Personal injury or illness .....
Marriage .....
Fired at work .....
Marital reconciliation .....
Retirement .....
Change in health of family member
Pregnancy .....
Sex difficulties .....
Gain of new family member .....
Business readjustment .....
Change in financial state .....
Death of a close friend .....
Change to different line of work..
Change in number of arguments with spouse .....
Mortgage over $20,000 .....
Change in sleeping habits .....
Change in number of family get-togethers .....
Change in responsibilities at work
Son or daughter leaving home....
Begin or end school .....
Change in living conditions.....
Revision of personal habits.....
Trouble with boss.....
Change in work hours or conditions
Change in residence .....
Vacation.....
Christmas .....

When the Chinese write the word *crisis*, they do it in two characters: one means *danger*, and the other *opportunity*. Are you using those opportunities for personal growth?

MY RECENT LIFE EVENTS AND STRESS

I answered a series of questions relative to recent events in my life. This was so I could get an idea of the amount of change and the amount of undesirable events I have had to deal with recently.

CHANGE

LESS | xx My score | MORE

My answers show that recently I have had to cope with about the same amount of change and stress compared to other people. Some of the stressful events in my life in the last year are listed at the left.

DESIRABILITY OF EVENTS

LESS | My score xx | MORE

Life events associated with change and increased strain may be desirable or undesirable. While retirement, for example, may be an event which someone eagerly anticipates and desires, adjustments which accompany that change may in themselves be stressful. Of the 7 life events I reported, I considered 5 of them to be desirable and 2 of them to be undesirable. Only I can assess how stressful such changes are for me. Usually, however, the less desirable the event, the more stressful it is likely to be.

ACTION:

Things I can do to deal better with stress and change and reduce anxiety

People have different, very personal ways of coping with stress and change. I can help myself deal with strain by taking steps to anticipate a change or crisis, and prepare for it, or avoid it, as appropriate. Knowing my own particular reaction to stress will especially help me to control its ill effects.

My success in controlling my Type A behavior will be related to how well I learn to cope with stress and change in my life.

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SOCIAL SUPPORT

WHAT IT IS: Your social support is provided by the group of people you are close to—those with whom you share happiness, trouble, advice; those you care for and who in turn care for you. This group is your social network.

Until recently, extended family and close friends have been key members of social networks. Today, greater mobility weakens family ties and close friendships and places greater reliance on the immediate family, neighbors, and fellow workers. To build and maintain a network requires a conscious effort. To this end, many people belong to at least one social organization, be it a church group, a labor union, or a sports club.

WHAT IT DOES: People who give you social support are an essential part of your life. You need them to share and stimulate your interests and activities, to help you learn about yourself and gain self-confidence, and to work with you to achieve life goals. Your self-esteem is often influenced by the attitudes and behavior of others.

Not everyone in your social network serves the same function. For example, some people you meet for recreation and others you see only at work.

Your Health Self-Appraisal is concerned with those individuals in your social network whom you trust enough to turn to for help in times of stress. These people offer support and protection during difficult times. Stress is rarely an individual affair. Others are affected either by the event, such as the death of a parent, or by your reaction to the situation. In turn, the way you deal with stress often is influenced by the advice and help you receive from those in your social network.

WHY IT MATTERS: Since many people turn toward others for advice and comfort in times of stress, those who have not developed a source of social support, or who have lost it, may be at a great disadvantage.

Individuals who are socially isolated, have few friends, and have unhappy family relationships may experience difficulty in dealing effectively with stressful events. They miss the objectivity, the reassurance, the additional point of view, and the warmth provided by another person.

An unhappy relationship, a falling out with a close friend, is not only stressful in itself but impairs relationships with others in and outside the family and the social network. This in turn further limits the individual's ability to cope with stress.

Various research studies on the "social health" of those who are single, divorced, separated, widowed, or unhappily married suggest that the loss of social and personal support experienced as a result of marital disharmony may be as difficult to adjust to as the social isolation experienced by those who are not married.

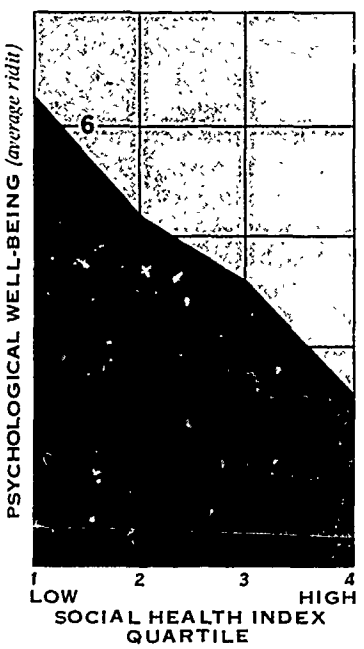
WHAT YOU CAN DO: Expand your social network by *actively* pursuing social experiences. Look up old friends, invite people to share activites, get to know your neighbors, take up a sport, or join a social organization.

Expand your range of interests, you will become better company for others. Accept the fact that people won't flock around you just because you want to be friendly. You need to demonstrate that you are interested in them and in the activities and ideas that interest them.

Strengthen ties with your family and old friends by keeping in contact, visiting, and taking care of them.

Realize that feeling isolated and lonely may be a sign of depression. Efforts to improve family relations and expand social and personal contacts will frequently help to alleviate depression. See the Resources section on page 44 for suggestions about places and activities that will help you contact people with your same interests. If you continue to feel depressed, however, see your doctor.

• In a study of 6928 adults in California, psychological health or well-being was found to be strongly linked with "social



health." The graph above illustrates this. (The higher the ridit, the worse the psychological health.)

[Source: K. Renne, *Social Science Research*, vol 3, page 42, 1974]

Karen Renne and co-workers have demonstrated that people who are socially healthy (are functioning members of their community) also tend to have better physical and emotional health. Presumably these states are mutually reinforcing.

MY SOCIAL SUPPORT

Many people find times of stress and change easier to handle when they have friends and relatives they can turn to for advice and support.

I answered some questions designed to help me look at my social support. Compared to other people, I have about the same number of friends and relatives around, and I see those people I am close to about as often. This means that in times of stress and change I may have about as many sources of support and comfort to turn to as most people.

WAYS I CAN STRENGTHEN MY SUPPORT SYSTEM

It takes a long time to get to know people and to establish a group of good friends. My usual network of friends may have been disrupted recently by my job change. Now is a good time for me to make an effort to expand and strengthen my circle of friends.

The support of friends and family in times of stress and change can make adjusting a lot easier. There are things I can do to strengthen my existing support system and expand my group of friends and relatives;

* Make a conscious effort to get to know more people,
* Take up a new activity, such as a sport or hobby which involves me with other people,
* Look up old friends and keep in contact with good ones, and
* Make a special effort to keep in touch with family.

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COPING

WHAT IT IS: Coping is dealing with stress and change. Whether you are aware of them or not, you have a wide range of coping skills which you use to avoid, combat, and respond to stress. These skills are learned, first from family members and later from your own experiences. Your coping strategies and tactics are among your most essential skills for adapting to life's changing conditions and stressful events.

WHAT IT DOES: Specific coping styles and strategies vary from one individual to the next. Your way of coping—for example, sleeping more, talking to your clergy or counselor, or working harder—depends on many factors. Your style of coping is shaped by your upbringing, by those in your social group, or by your prior experience. Therefore, no specific coping strategy is wrong or right for all situations. The most important thing is whether or not your method works to reduce the effects of stress and change for you. Coping strategies and tactics can be divided into two types: (1) *adaptive* tactics are those which are successful for you and (2) *maladaptive* tactics are those which somehow don't seem to work out right for you.

Adaptive Coping. There are many kinds of stresses and changes in your life which you deal with successfully. If you think about what you do in such situations, you will observe yourself coping adaptively by meeting a problem head-on rather than putting it off, by getting good advice, and by being able to relax and take a break in times of great stress. Adaptive coping is a creative defense mechanism that seeks to fulfill, not merely protect, a person. When your coping skills are successful you come away from the situation with the feeling that you have mastered it, that you have done the right thing, and that the situation has in fact been dealt with properly. Adaptive coping reduces anxiety and increases confidence in being able to deal with stress effectively.

Maladaptive Coping. A response to challenge, or stress that works neither to reduce anxiety nor to resolve the situation at hand is maladaptive coping. Like virtually everyone else who has ever lived, you can find instances of maladaptive coping in your life, such as going on a binge and eating or drinking too much, getting angry and losing control and self-respect, avoiding responsibility, or becoming withdrawn and feeling bitter without discussing your problem. Instead of getting you in touch with help, maladaptive coping strategies often isolate you and compound your problems. In addition, continued maladaptive coping can lead to some of the same effects as *chronic stress* (see page 10 for a detailed discussion).

WHY IT MATTERS: The degree to which you successfully cope with stress and change can have a profound effect on your mental well being and physical health. As you know from the section on stress, the consequences of continued maladaptive coping can be very serious. At best, maladaptive coping is associated with continued anxiety in the face of a stressful situation that has not been resolved. At worst, chronic stress may lead to exhaustion and breakdown. Adaptive, successful coping is a way of making the best of a situation and getting what you want out of life.

WHAT YOU CAN DO: Remember that your coping style and skills are *learned* to a great extent and, if you need to, you can continue to learn better ways of coping. Like other aspects of managing your health, you can control the way you cope with stress and change. You need to become aware of your own patterns of adaptive and maladaptive coping.

On the next page you can read about the coping styles and orientation you use most frequently. The strategies that work for you are a continuing source of strength, the ones that don't are an opportunity for change. If you frequently use maladaptive methods, concentrate on finding adaptive coping strategies. Learn from your family and friends. How do other people successfully cope with stress and change? Try out ways that seem to work for others.

Problems usually don't go away by themselves. Be active and decisive in coping with them.

If you feel the need to learn new ways of coping, you may want to consult a professional counselor.

THESE ARE SOME WAYS OF COPING PEOPLE OFTEN USE

Try to forget the whole thing by going to the movies, watching TV or reading a novel

Eat more than usual

Talk things over with your family

Take a pill or medicine such as a tranquilizer, sedative, sleeping pill, stimulant or anti-depressant

Take long baths or showers

Pray for guidance

Avoid other people, get away by yourself

Do something active like hard physical exercise

Get in the car and drive

Seek the advice and support of friends

Take long walks

Think it through and try to change your viewpoint or the way of looking at the problem

Go to church

Sleep more than usual

Look for someone to blame.

Be rowdy and call attention to yourself.

Go to a psychiatrist, psychologist or social worker

Make love more than usual

Force yourself to put it out of your mind

Become more careful and conscientious–like in checking and rechecking your work

Allow yourself to be more irritable

Treat or indulge yourself–like buying something you've wanted

Smoke more than usual

Talk it over with a clergyman or spiritual adviser

Let off steam by getting angry

Just suffer it through and endure the problem as best you can

Get away for a few days

Avoid thinking about the problem

Go to a doctor other than a psychiatrist

MY COPING STYLES

V My score

Infrequently | I AVOID / ESCAPE THE PROBLEM | *Frequently*

My score indicates that when confronted with a stress or change I rarely cope by trying to avoid it, hoping that it will just go away.

My score V

Infrequently | I RELY ON MYSELF | *Frequently*

This means that, when faced with a problem, I often cope by trying to meet it head on and take responsibility myself for dealing with it.

V My score

Infrequently | I SHARE THE PROBLEM WITH FRIENDS | *Frequently*

My score indicates that when confronted with a stress or change I rarely cope by talking things over with a close friend or family member.

V My score

Infrequently | I SEEK PHYSICAL COMFORT | *Frequently*

When confronted with a stress or change I sometimes cope by seeking physical or material comfort or by indulging myself.

V My score

Infrequently | I USE DEPRESSANTS OR STIMULANTS | *Frequently*

This means that I rarely turn to things like smoking, drinking, or pills to help me cope with a stress or change.

V My score

Infrequently | I TURN TO RELIGION | *Frequently*

This means that I rarely turn to religion to help me cope with stress and change.

V My score

Infrequently | I SEEK MEDICAL HELP | *Frequently*

I rarely consult a physician or other health professional for advice and help in coping with stress and change.

THE COPING STYLES I USE MOST FREQUENTLY ARE:

Rely on myself

Seek physical comfort

TYPICALLY I TURN TOWARD: Myself

ACTION: In general, my ways of coping with stress and change seem to be adaptive and to work successfully to control stress in my life and adjust to change. Coping is learned. If I want to, I can learn additional ways of coping. Knowing how I cope now is the first step toward expanding my options. Next I can explore effective coping strategies - other people's and my own.

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HEART DISEASE | STROKE

WHAT THEY ARE: Heart disease and stroke are major causes of premature death and disability.

A *heart attack* occurs when a blood clot blocks a coronary artery and stops the blood flow to a portion of the heart, killing that portion of the heart muscle. A *stroke* occurs when there is interference with the blood supply to the brain. Atherosclerosis is the slow, progressive process that sets the stage for heart attack and stroke. The arterial walls become thickened and roughened, making it difficult for the blood to pass through the narrowed arteries. A clot can develop easily under those conditions, block the artery, and deprive the heart or brain of blood.

WHAT THE RISKS ARE: Your risks of heart disease and stroke are related to the following factors.

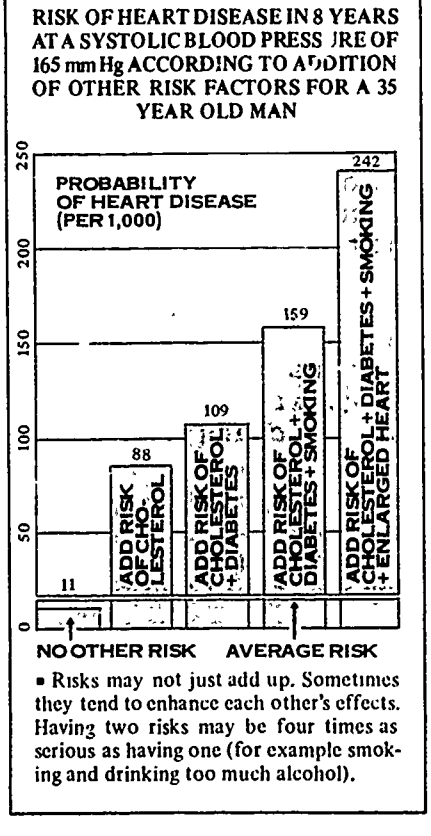
Age. It should come as no surprise that the older you are the greater are your chances of having a heart attack or a stroke. Your risk, shown on the opposite page, has been calculated to include the effect of your age. As men reach their mid-thirties the risk of a heart attack increases significantly.

Sex. The average risk of heart disease and stroke is less for women than for men. This difference is reflected in woman's longer average life span.

Blood Pressure. The higher your blood pressure, the higher your risk of heart disease and stroke. There is no threshold value for high blood pressure (see pages 18-19).

Blood Cholesterol. An increased level of cholesterol in your blood increases your risk of heart disease and stroke. Here, too, there is no threshold value. The higher your cholesterol value, the higher your risk (see pages 22-23).

Blood Sugar. When blood sugar is not controlled by the body (as in diabetes) so that levels of blood sugar are allowed to rise above normal, the risks of heart disease and stroke increase.



• Risks may not just add up. Sometimes they tend to enhance each other's effects. Having two risks may be four times as serious as having one (for example smoking and drinking too much alcohol).

Exercise. An adequate amount of vigorous exercise on a regular basis may protect you against heart disease and stroke. The amount and nature of your exercise has been considered in the estimation of your overall risk of cardiovascular disease (see pages 20-21).

Smoking. How much you smoke, whether or not you inhale, and how long ago you stopped smoking influence your risk of cardiovascular disease (see pages 28-29).

Type A Personality. How you cope with stress and the way you react to difficult situations affect your risk of a heart attack. Type A personalities have an increased risk. You can read about Type A behavior on pages 26-27.

WHY IT MATTERS: Of the eight risk indicators listed above, you can control the last six to varying degrees. Your analysis on the opposite page should help give you a clearer understanding of how separate risk factors interact to contribute to your overall risk. For example, the graph on this page shows risk for a 35-year-old man with elevated blood pressure and the increase in risk as other characteristics are added.

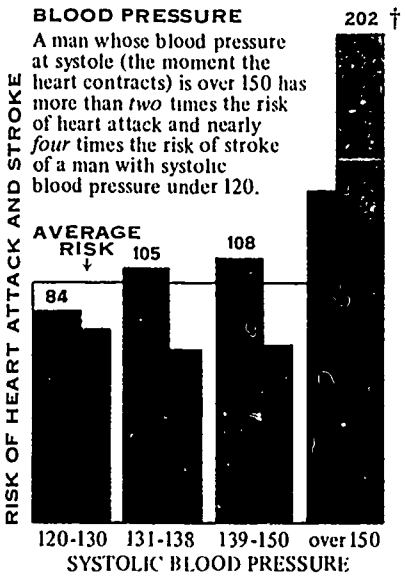
WHAT YOU CAN DO: If your risks of heart disease are greater than average, chances are you can reduce them. Many people are doing just that. At present, there is a striking decline in deaths from heart disease in the United States, attributed to the changes that people have made in their habits of smoking, diet, and exercise. Studies show that those who quit smoking significantly reduce their risk of death from a heart attack. Even if you are at average risk you may be able to protect yourself further.

On the next page you see what your chances are of having a heart attack or a stroke, and what your chances are of dying from these conditions. Pages 18-28 which follow this section will allow you to focus on individual components of this overall risk. As you proceed through your Report make sure you understand how your behavior affects your risk. Then ask yourself whether you want to and are able to make some changes to improve your health. The next section of your Report will allow you to take a detailed look at five risk indicators for heart disease which you *can* control.

■ HEART ATTACK ■ STROKE

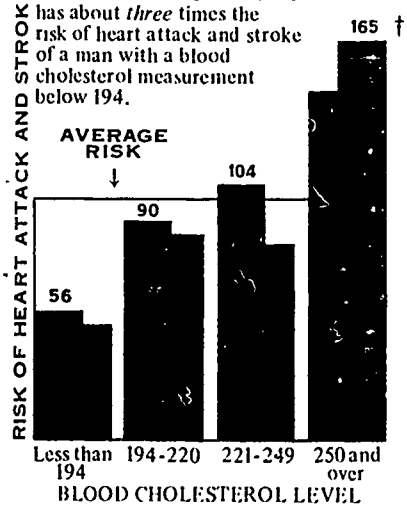
BLOOD PRESSURE

A man whose blood pressure at systole (the moment the heart contracts) is over 150 has more than *two* times the risk of heart attack and nearly *four* times the risk of stroke of a man with systolic blood pressure under 120.



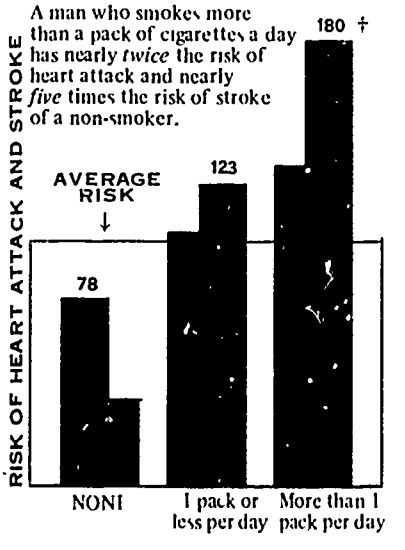
CHOLESTEROL

A man with a blood cholesterol measurement of 250 or above has about *three* times the risk of heart attack and stroke of a man with a blood cholesterol measurement below 194.



CIGARETTE SMOKING

A man who smokes more than a pack of cigarettes a day has nearly *twice* the risk of heart attack and nearly *five* times the risk of stroke of a non-smoker.



MY RISKS OF HEART DISEASE AND STROKE

MY RISK OF GETTING HEART DISEASE

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXXXX
My attainable risk: XXXXXXXX

My risk of getting heart disease within 15 years is about average for a man my age. My attainable risk shows what I could reach.

MY RISK OF DYING FROM HEART DISEASE

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXXX
My attainable risk: XXXX

My risk of dying from heart disease within 15 years is about average for a man my age. My attainable risk shows what I could reach.

MY RISK OF SUFFERING A STROKE

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXXX
My attainable risk: XXXXXX

My risk of having a stroke within 15 years is a little below average for a man my age. My attainable risk shows what I could reach.

MY RISK OF DYING FROM A STROKE

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXXX
My attainable risk: XXXXXX

My risk of dying from a stroke within the next 15 years is a little below average for a man my age. My attainable risk shows what I could reach.

INDICATORS WHICH INCREASE MY RISK OF HEART DISEASE AND STROKE:	INDICATORS WHICH DECREASE MY RISK OF HEART DISEASE AND STROKE:
Type A behavior Cholesterol level Blood pressure level	The exercise I get No cigarette smoking

ACTION:

I can help my risks approach my attainable risk levels by controlling my Type A behaviors, reducing my cholesterol level and reducing my blood pressure. I need to continue to get as much or more exercise as I am now getting because these things contribute to maintaining or reducing my risks. My report shows me the effects of these indicators on my present attainable risks.

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† *The numbers at the top of the bars show the risk of getting a heart attack or a stroke for men aged 30 62 (number of cases per 1,000 in 8 years).*

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BLOOD PRESSURE

WHAT IT IS: Your blood pressure is the pressure exerted by your blood on the walls of your blood vessels as your heart pumps. Blood pressure is estimated by measuring the force necessary to close an artery when the heart is contracting (your systolic blood pressure) and when the heart is relaxing (your diastolic pressure). Thus a blood pressure of 120/80 means 120 mm systolic and 80 mm diastolic pressure.

Blood pressure is usually considered high if it is greater than 140/90. However, the point at which someone is said to have high blood pressure is as arbitrary as the point at which someone is said to be overweight. As blood pressure increases, so do your risks of heart disease and stroke. The lower your blood pressure, the safer you are. A blood pressure of 120/80 is healthier than 130/85. A blood pressure of 110/70 is healthier than 120/80.

Hypertension is the medical term for high blood pressure. It is not a nervous condition or a sign of emotional instability.

High blood pressure is not just a disease of the elderly. Anyone, including children, can have it. There are no distinctive feelings, sensations, or symptoms of high blood pressure. The only way to find out if you have hypertension is to have your blood pressure checked.

You have control over several factors which affect your blood pressure.

Weight. The heavier you are the more likely you are to have high blood pressure.

Salt. Too much table salt tends to increase blood pressure; lowering your salt intake will help to lower your blood pressure.

Stress. People who lead stressful lives often have increased blood pressure.

Exercise. Regular vigorous excercise tends to lower blood pressure.

WHAT IT DOES: High blood pressure affects vital areas of the body including the heart, brain, and kidneys.

Heart Failure. High blood pressure makes your heart pump harder than normal. This may cause the heart to enlarge, weaken, and stop pumping effectively.

Atherosclerosis. Hardening and narrowing of the arteries is accelerated by high blood pressure. When the arteries serving the heart become too narrow, heart attacks can occur.

Kidney Damage. Blood vessels of the kidneys are often hardest hit by high blood pressure and they are no longer able to perform their task of clearing wastes from the blood stream.

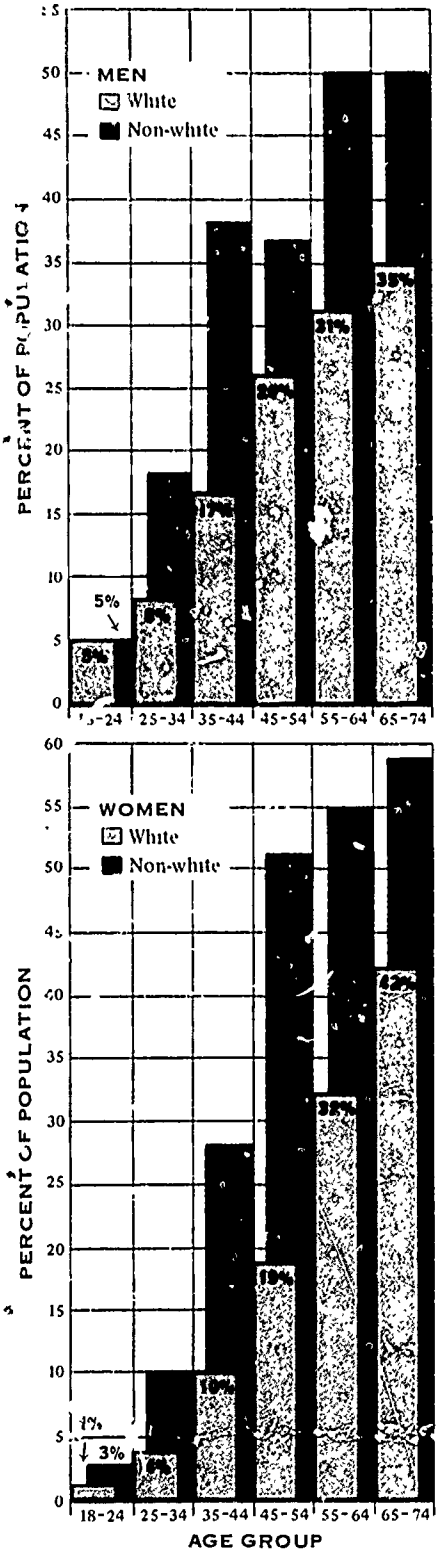
Stroke. High blood pressure tends to accelerate atherosclerosis. Cholesterol and other substances can become lodged in the walls of the blood vessels, lessening their capacity to carry blood. A stroke may occur when an artery feeding the brain becomes blocked by these deposits thus cutting off the brain's blood supply.

WHY IT MATTERS: The higher your blood pressure the higher your risk of dying from a heart attack and a stroke. Your risks, shown on the next page, are based upon your blood pressure. Remember that even though your blood pressure may be "normal" for your age it may not be healthy. Keep in mind that you can improve your health by lowering your blood pressure and that your risks go down as your blood pressure goes down. High blood pressure won't go away by itself.

WHAT YOU CAN DO: It is important to know what your blood pressure is so that you can do something to lower it if you need to.

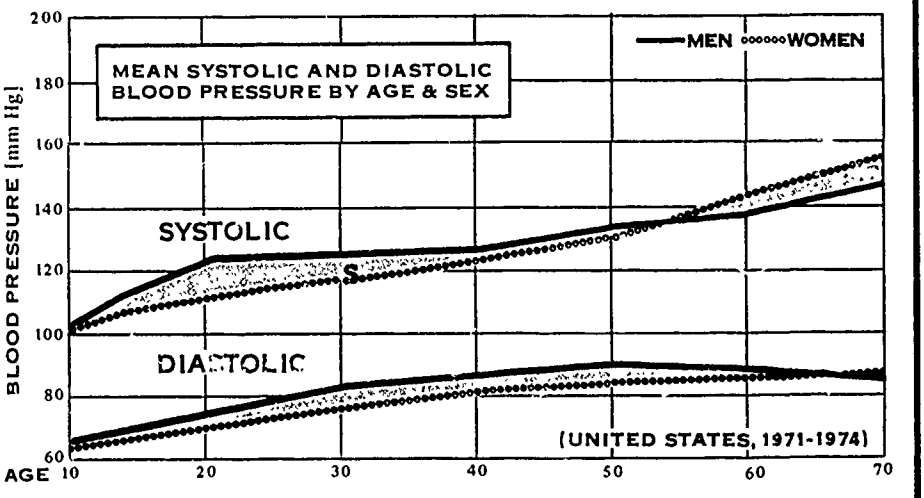
- Have your blood pressure taken at least once a year, or learn to take it yourself.
- Keep your weight down.
- Limit the amount of salt you consume.
- Exercise regularly.
- Relax. Regular, deep relaxation exercises are effective in lowering blood pressure.
- Take your prescribed medication if you have already been treated for high blood pressure.

OCCURRENCE OF BLOOD PRESSURE GREATER THAN 160/95 IN THE U.S.: (1971-1974, BY AGE, SEX, AND RACE)



As you can see from the charts above high blood pressure is more frequent as you get older and is different for men and women and among races.

MY BLOOD PRESSURE AND MY HEALTH



Although I don't know my exact blood pressure, I said it is about normal. My blood pressure was assumed to be 125 in my risk calculations.

My blood pressure affects my health, specifically my chances of getting or dying from a heart attack or a stroke.

RISK OF GETTING A HEART ATTACK

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXXX
If my BP were 110/70: XXXXXXXXXXX

A lower blood pressure would reduce my risk of having a heart attack in the next 10 years.

RISK OF SUFFERING A STROKE

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXXX
If my BP were 110/70: XXXXX XXXX

A lower blood pressure would reduce my risk of having a stroke in the next 10 years.

RISK OF DYING FROM A HEART ATTACK

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXX X
If my BP were 110/70: XXXXXXXXXXX

A lower blood pressure would reduce my risk of dying of a heart attack in the next 10 years.

RISK OF DYING FROM A STROKE

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXXXX
If my BP were 110/70: XXXXXXXXXX

A lower blood pressure would reduce my risk of dying from a stroke in the next 10 years.

ACTION: I reported that my blood pressure is about average. I should have my blood pressure checked regularly. If I want to lower it I should watch my weight and the salt in my diet.

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EXERCISE

WHAT IT IS: Walking or swimming may *not* be exercise for some. Exercise is activity that increases the heart rate or pulse. To benefit from exercise you must engage in an activity that raises your pulse to about 120 beats per minute. Walking or swimming counts as exercise only if it increases your pulse rate sufficiently.

WHAT IT DOES: Exercise can be fun and healthy. If done regularly, it will increase your sense of well-being and help you meet the stress of day-to-day events. A moderate amount of exercise leads to a slowing of the resting pulse rate, a stronger heart beat, an improvement in the flow of blood through the heart muscle, an enlargement in the size of the coronary arteries, an increased level of high density lipoprotein (see page 22), a lowering of blood pressure, and an increase in auxiliary blood vessels which feed the heart.

WHY IT MATTERS: Exercise makes you feel good, but does it actually reduce your chances of illness or premature death? Research increasingly suggests that exercise does lead to better health.

Exercise and Heart Disease. It is becoming clear that a regular pattern of vigorous exercise lowers your risk of dying from a heart attack. People who have strenuous jobs have about half the risk of getting a heart attack as sedentary workers. More recently it has been shown that vigorous leisure time exercise—activity such as lap swimming or jogging, intense enough to expend 2000 calories of energy per week—offers protection against heart attacks.

Exercise and Obesity. Consuming too many calories and expending too little energy results in obesity. While food restriction

leads to weight loss at the expense of both fat and muscle tissue, sufficient exercise appears to cause weight loss primarily from fat stores. Exercise, therefore, is an excellent way of preventing or reducing obesity.

Exercise and Mental Health. People who exercise regularly experience an increased awareness, a greater power of concentration, and a feeling of general well-being. They do not tire as easily as inactive people. Vigorous exercise has also proved to be effective in reducing tension and stress. Recently, regular exercise programs such as jogging have been used successfully to help people deal with depression.

WHAT YOU CAN DO: On the next page you will learn how the amount of exercise you do affects your health and how you compare with others. Use this information to decide whether you want to increase your current exercise level and how you wish to do this.

Before changing your exercise program, check your fitness level. Are you presently under medical care for any disease or condition? Do you have high blood pressure? Do you frequently experience chest pains or dizziness? Do you know of any other reasons for not beginning a program of more vigorous activity? If you answered yes to any of these questions, it is important to see your doctor before increasing your exercise level significantly.

There are many different ways to exercise and many books available to help you. Some exercise you take alone, while some can be done in the company of others. Some requires a considerable investment of time and money and others don't cost a penny. Decide what suits *you* best. It is more likely you will continue with it.

Exercise doesn't have to hurt to be good for you. Choose activities you enjoy. Regular exercise will help to keep you healthy and energetic, as well as help to prevent heart disease.

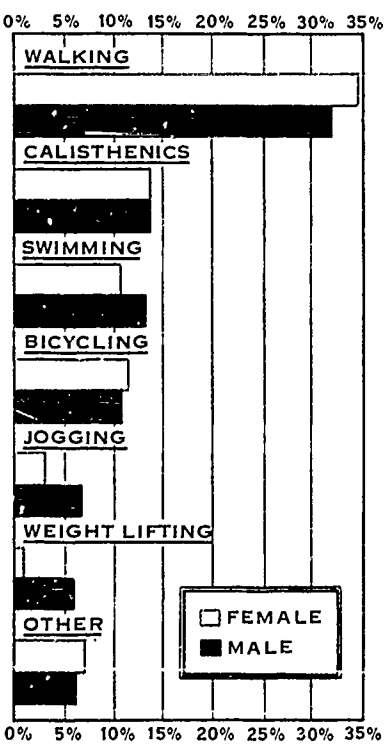
Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and to meet unusual situations and unforseen emergencies.

President's Council on Physical Fitness

GOALS OF AN EXERCISE PROGRAM

- Improve and maintain muscular strength.
- Improve muscular endurance.
- Improve circulatory and respiratory endurance.

PERCENT OF PERSONS 20 YEARS OF AGE AND OVER WHO REPORTED REGULAR EXERCISING, BY TYPE OF EXERCISE. (U.S. 1975)



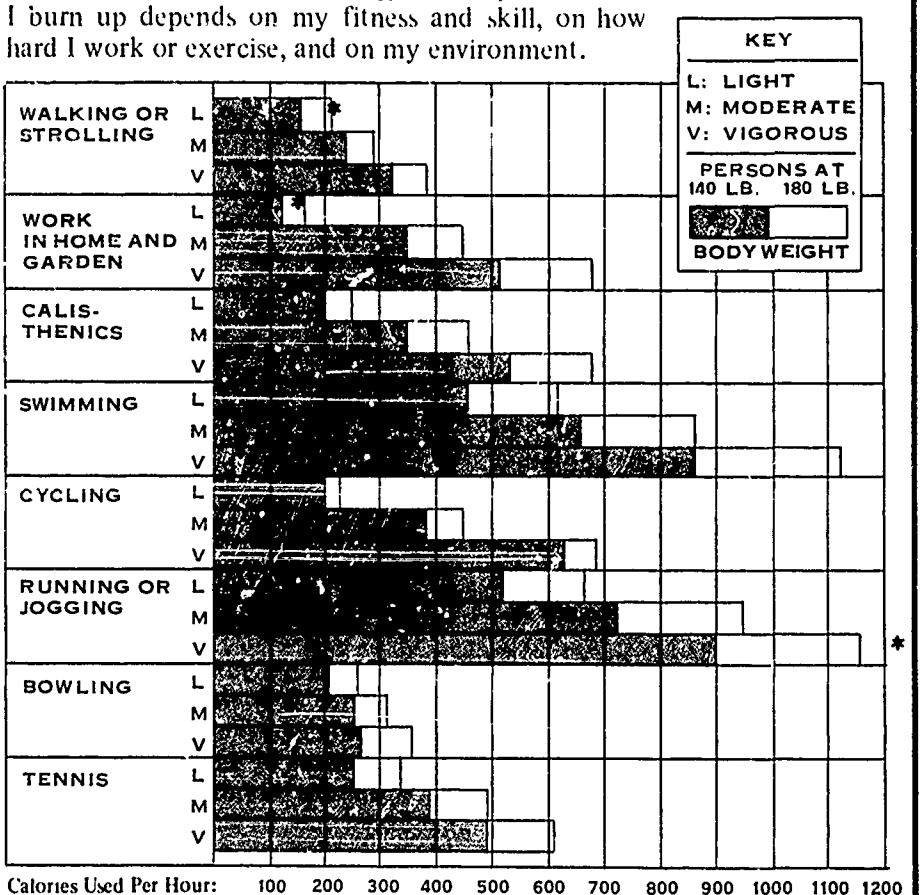
EXERCISE AND MY HEALTH

The chart below shows the exercise I reported. My total caloric expenditure from exercise and work is about 2,904 calories per week. This number takes into account my weight, the type of exercise, and how vigorously I exercise. Most likely, a little exercise is better than none and the more I exercise the more I benefit. However, the best available evidence suggests that at least 2000 calories per week must be expended to decrease the risk of a heart attack.

I am helping myself considerably by expending more than 2000 calories per week through exercise. In addition to protecting my heart I am helping to lower my blood pressure, keep my weight down and lower my cholesterol.

HOW I CAN GET MY EXERCISE

For each kind of exercise, the length of the bar graph (see below) shows approximately how much energy is used per hour. The number of calories I burn up depends on my fitness and skill, on how hard I work or exercise, and on my environment.



ACTION: By increasing my exercise I may help lower my blood pressure, help lower my cholesterol level and raise my high density lipoprotein level and lose some weight.

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CHOLESTEROL

WHAT IT IS: Cholesterol is a fatty substance found in all animal tissues and abundant in eggs, organ meats (liver, kidney, brain), milk, butter, and other dairy products. It is essential for normal cell function. Cholesterol levels in the blood roughly range from 150 to 350 mg. Levels less than 220 mg are generally considered normal for adults.

WHAT IT DOES: The blood cholesterol level is directly related to the process which causes heart disease and stroke. Deposits of cholesterol on the walls of blood vessels increase the likelihood that they will become narrow and clogged.

High density lipoprotein (HDL), a substance containing both fat and protein, is found in the bloodstream and seems to work to prevent this build up of cholesterol by carrying it to the liver where it is removed from the circulation. Research has found that HDL decreases the risk of heart disease; men have, on the average, lower HDL than females; diabetics have lower HDL than nondiabetics; and exercise increases HDL.

The cholesterol level in your blood is internally regulated to a certain extent, but also varies according to your age and sex (see graph on next page), the amount of cholesterol in your diet, and the type and amount of fat content in your diet.

If your normal diet contains many foods that are rich in cholesterol, such as eggs, milk, and liver, your blood cholesterol level will tend to be higher. The average American consumes 600 mg of cholesterol a day, double the amount that is considered healthy.

Dietary fats are primarily *saturated* and *polyunsaturated*. Generally, animal fats are high in saturated fats. Most vegetable fats like corn oil and sesame oil are high in polyunsaturated fats. Saturated fats increase the level of blood cholesterol and polyunsaturated fats decrease it. It is thought that the polyunsaturated fats are important to the process of removing cholesterol from the bloodstream and that saturated fats hinder the process. Most Americans eat three times more saturated fat than polyunsaturated fat. A more appropriate balance would be 2-3 times as much polyunsaturated as saturated fat.

WHY IT MATTERS: Your risk of having a heart attack or stroke increases as the cholesterol level in your blood increases. When your blood cholesterol is elevated, the inner layers of the artery walls are more likely to be thickened by the build up of fatty materials. As more cholesterol accumulates, the arteries become narrowed and roughened, gradually cutting down the blood flow and therefore the supply of blood to the heart and brain. Obstructed blood flow to the heart may cause a heart attack; insufficient blood to the brain may result in a stroke.

A 30-year-old man with a cholesterol level of 260 mg/100 ml has 5.5 times the risk of having a heart attack in the next five years as a man of the same age with a cholesterol level under 200 mg/100 ml.

WHAT YOU CAN DO: Elevated blood cholesterol acts to increase your risk of heart disease and stroke. Although scientific studies show contradictory results, most of the evidence to date suggests that lowering your cholesterol intake will help to reduce your risk. It certainly would not hurt to modify your cholesterol level as a precautionary measure.

In order to decrease your blood cholesterol level, reduce your intake of cholesterol and saturated fats. Try to stay below 300 mg of cholesterol per day (see table on following page).

Trim away visible fat from meats, poultry, and fish and reduce or eliminate the use of fat drippings. Be more aware of the fats in products such as hamburgers, cheese, ice cream, baked goods, and other highly processed foods.

Get more exercise. It may increase the level of high density lipoprotein in your blood and reduce your risk of heart attack and stroke.

CHOLESTEROL CONTENT OF SOME COMMON FOODS

HIGH (more than 100 mg/serving)

- Brains
- Kidney
- Liver
- Eggs
- Beef Heart
- Shrimp
- Lobster
- Tuna Fish, packed in oil

MODERATE (more than 30 mg/serving)

- Lamb
- Veal
- Beef
- Chicken
- Pork
- Turkey
- Cake (from mix)
- Butter
- Sausage, frankfurters
- Most fish

LOW (less than 30 mg/serving)

- Skim Milk
- Cottage Cheese
- Yogurt-non-fat milk
- Ice Cream (low-fat)
- American, Swiss Cheese

We have no doubt from the vast amount of data available that elevated cholesterol is associated with an increased risk of heart attack.

We have no doubt that cholesterol can be lowered by diet and/or medication.

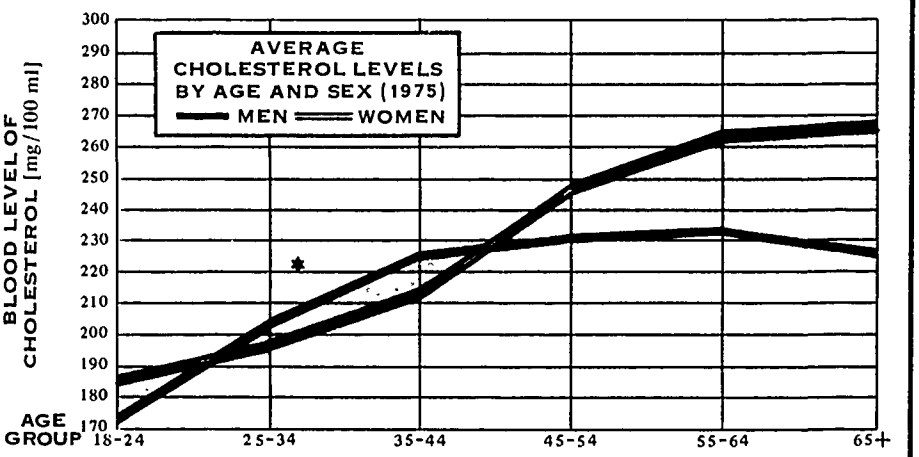
Where the doubt exists is the question of whether *lowering* cholesterol will result in a reduced incidence of heart attack; that is still presumptive. It is unproven but there is a tremendous amount of circumstantial evidence.

Dr. Robert Levy, Director, National Heart, Lung and Blood Institute, 1977

It therefore seems that the only prudent course of action to take in the best interest of the health of the Nation is to recommend that cholesterol consumption be reduced to about 300 mg. per day.

Dietary Goals for the U.S. Select Committee on Nutrition and Human Needs, 1977

MY CHOLESTEROL AND MY HEALTH



Because I did not know my cholesterol level, in my risk estimations my cholesterol level is assumed to be 220. (see pages 5-7).

MY CHANCE OF GETTING A HEART ATTACK

Average risk my age/sex/race: [redacted]

MY RISK: XXXXXXXXXXXX

If my cholesterol level is 180 or less: XXXXXXXX

My cholesterol approaches average. A lower cholesterol would reduce my risk of having a heart attack within the next 10 years.

MY CHANCE OF SUFFERING A STROKE

Average risk my age/sex/race: [redacted]

MY RISK: XXXXXXXXXXXX

If my cholesterol level is 180 or less: XXXXXXXX

My cholesterol approaches average. A lower cholesterol would reduce my risk of having a stroke within the next 10 years.

MY CHANCE OF DYING FROM A HEART ATTACK

Average risk my age/sex/race: [redacted]

MY RISK: XXXXXXXXXXXX

If my cholesterol level is 180 or less: XXXXXXXX

My cholesterol approaches average. A lower cholesterol would reduce my risk of dying from a heart attack heart attack within the next 10 years.

MY CHANCE OF DYING FROM A STROKE

Average risk my age/sex/race: [redacted]

MY RISK: XXXXXXXXXXXX

If my cholesterol level is 180 or less: XXXXXXX

My cholesterol approaches average. A lower cholesterol would reduce my risk of dying from a stroke within the next 10 years.

ACTION: This estimation of my risks is based on an average cholesterol level for a man my age. In order to make my own decisions about maintaining or reducing my risk of heart attack and stroke, I need to have my cholesterol level checked regularly.

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WEIGHT

WHAT IT IS: Your *desirable* weight is the weight at which people of your age, height, build, and sex tend to live longest. Since people value their looks, they tend to react more to their appearance than to how much they weigh. It is important to understand that the *average* American male weighs 20-30 pounds more than his desirable weight and the *average* American female weighs 15-30 pounds more than her desirable weight.

Obesity is a problem of fat, not weight. It refers to excessive amounts of *body fat* as opposed to muscle or bone. Experts consider people who are 20% more than their desirable weight to be *obese.* Your waistline is a good indicator of whether or not you are obese. Check your waistline results on the opposite page. Even if you are not obese, but *are* too fat, you will benefit from achieving your desirable weight.

WHAT IT DOES: Obesity is associated with many changes in metabolism and circulation. The long-term effects of obesity are not fully understood but it is clear that they are detrimental to your health.

WHY IT MATTERS: Overall Mortality. It is no coincidence that individuals who live a long life tend to be lean and active people who eat light, well-balanced meals. Life insurance studies show that the more you weigh, the greater your risk of premature death. In fact, your chances of premature death increase by 10% for every 10 pounds that you are overweight.

Heart Disease and Stroke. The risks of heart disease and stroke increase substantially for obese people. If you are 20% over your desirable weight your risk of heart failure and stroke doubles and your chances of getting angina pectoris and of dying suddenly from a heart attack are also increased.

Cholesterol. Obesity is associated with higher cholesterol levels. Losing weight tends to lower cholesterol levels and decrease the associated risks of heart attack and stroke.

Blood Pressure. Your risks of heart attack and stroke are influenced by your blood pressure and your blood pressure is affected by your weight. It has been estimated that a weight gain of 10% increases your systolic blood pressure by about 6-7 mm. Losing weight has the opposite effect on your blood pressure.

Cancer. Women who are obese have an increased risk of cancer of the womb and a slightly increased risk of breast cancer.

Other Reasons. Being obese imposes burdens on the body that take their toll over time. Obese people tend to develop degenerative arthritis, gallstones, and gallbladder inflammation more frequently than non-obese people.

WHAT YOU CAN DO: Obesity occurs because you consume more calories than you expend As you get older, you use less energy and tend to gain weight. There is no magic formula for losing weight despite the numerous books, medicines, and diets that are available.

If you decide that you want to lose weight, it may be helpful for you to learn about the composition of food as well as the calories in it.

It may also be helpful to learn other ways in which food meets your needs. Is it a reward or a compensation for stress or boredom?

Follow these basic principles in any diet program:

Plan to lose weight gradually, not all at once: set realistic weight loss targets such as losing a pound a week.

Reward yourself when you reach your goals, but don't use food as the reward.

Enlist the help and support of family and friends, perhaps by dieting with someone else.

Learn about what you eat and develop healthy eating habits.

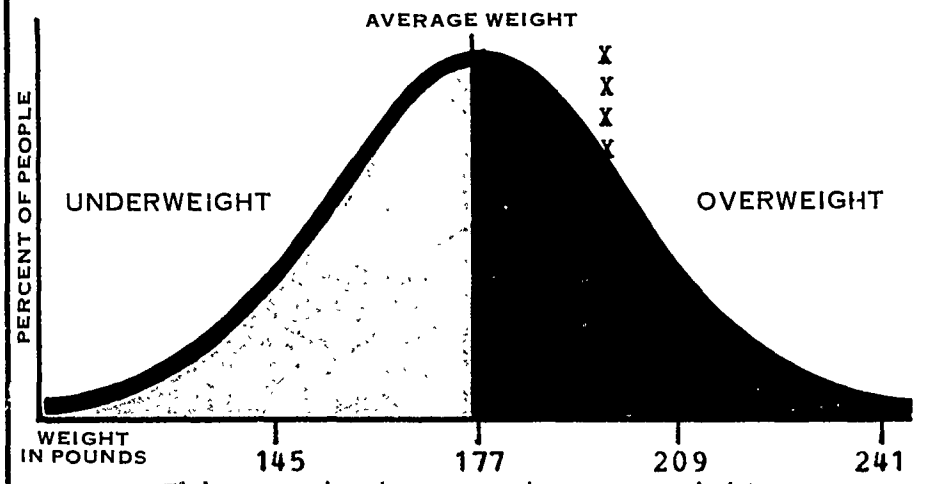
Decrease your energy intake and eat fewer calories.

Don't eat between meals.

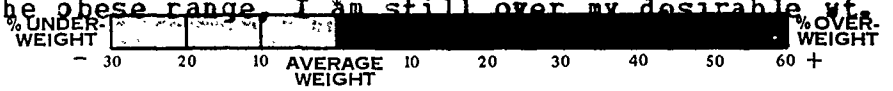
Increase energy expenditure by excercising.

Protect yourself against inadequate nutrition by eating a wide variety of foods.

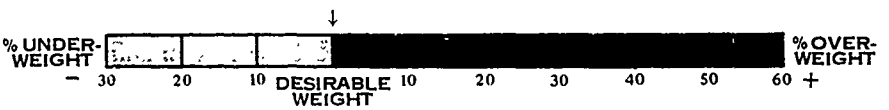
MY WEIGHT AND MY HEALTH



This graph shows me how my weight compares to that of other men my age. This graph shows average weight, not desirable weight. I reported that my waist measured 36 inches. This indicates that even though my waist measurement is not in the obese range, I am still over my desirable wt.



I am 10 percent over the average weight of men like me. This amounts to 18 lbs.



I am above my desirable weight range. The desirable weight range for a man of my height and body frame is 164 to 175 lbs.

Since I am 11 percent over the top of my desirable weight range, I would benefit from losing weight.

HOW MY WEIGHT AFFECTS MY HEALTH:

My being 11 percent over the top of my desirable weight range tends to increase risks of heart disease, stroke and diabetes. My blood pressure, cholesterol, and blood sugar might be lower if my weight were less.

ACTION: I need to review the ways in which my weight affects my health, how I feel, and how I feel about myself, and then decide if I want to change. If I do, I might benefit from not eating between meals.

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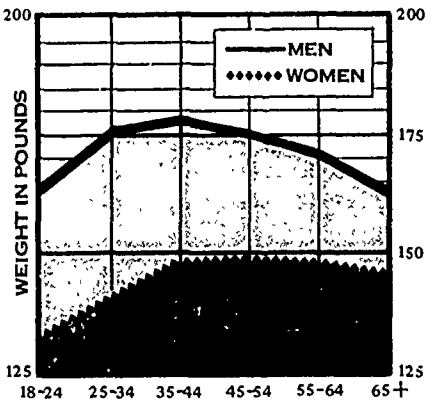
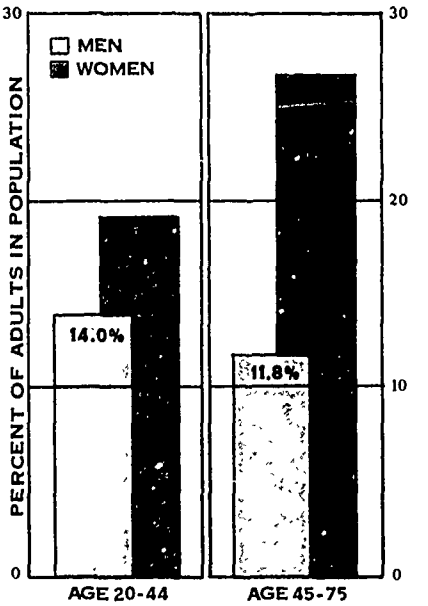
MEAN WEIGHT IN POUNDS OF U.S. ADULTS 18-74 YEARS BY AGE, SEX.



MY DESIRABLE WEIGHT
That weight at which I am likely to live longest. It is derived from experience with large groups of people over many years.

OBESITY IN AMERICAN ADULTS



To avoid *overweight* consume only as much energy (calories) as is expended – If overweight, decrease energy intake and increase energy expenditure.

Dietary Goals for the U.S.
Goal 1, U.S. Senate, 1977

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TYPE A BEHAVIOR

WHAT IT IS: A high cholesterol diet, elevated blood pressure, smoking, and lack of exercise are not the only factors that contribute to heart attacks. Recent medical research has found a link between people's behavior and coronary heart disease. People who display excessive amounts of hostility, anger, aggressiveness, irritability, impatience, competitiveness, and urgency in their day-to-day life manifest Type A behavior. These people have a greater chance of getting a heart attack than those who are more relaxed and easygoing.

Type A personalities tend to move, walk, and eat rapidly; they also tend to explosively accentuate key words in their speech, get enraged when delayed by traffic or are kept waiting, feel guilty when relaxing, and measure their success in terms of numbers, such as swimming fifty laps or closing four deals.

Type A behavior appears to be a strategy for coping with uncontrollable stress. These individuals will step up performance if they feel that the control they have over their environment is being threatened.

In contrast, non-Type A personalities tend to be easygoing, relaxed people who do not become angry or agitated easily.

It is also becoming clear that you can have a few Type A characteristics or many.

WHAT IT DOES: Type A people respond to physical and environmental challenges with a greater increase in their pulse rate, activity level, and blood pressure than non-Type A people.

Current research suggests that the nervous and hormonal state which Type A behavior produces and sustains leads to higher cholesterol levels and a greater degree of narrowing of blood vessels. Under these circumstances the heart may not receive the oxygen that it needs. If this is the case, a heart attack can occur.

WHY IT MATTERS: What is the relationship between Type A behavior and risk of a heart attack?

- Type A individuals have about twice the risk of a heart attack as non-Type A individuals.
- If you have had one heart attack already and are Type A, you are more likely to have another one than non-Type A people who have had a heart attack.
- Type A individuals are more likely to have narrowing of their blood vessels.
- The more Type A characteristics you have, the greater your risks are of heart attack.

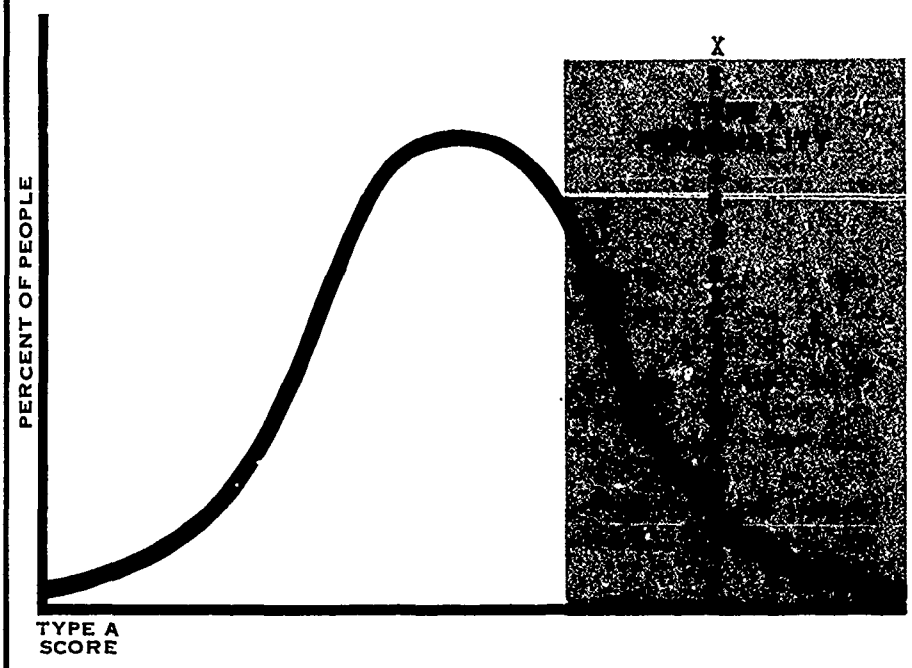
WHAT YOU CAN DO: If you lean towards having a Type A personality (see the opposite page for your results) it may be important for you to know that you can be hardworking and yet *not* be irritable, hostile, and aggressive at the same time. You should always try to set aside some time each day for relaxation.

In the long run Type A behavior is probably a harmful way of coping with stress and may increase the risk to your health considerably. Personal methods of coping with stress are difficult to change, but there are things you can do.

You have already taken a most important step in reducing risk by finding out if you are a Type A individual. If you do lean towards being Type A, then simply becoming aware that your behavior has a pattern which may be detrimental to your health will undoubtedly help you change.

Learn to recognize situations that lead to Type A responses and organize your life-style to avoid them. For example, go to the bank when lines are shortest. Reward yourself for responding in a relaxed, non-Type A fashion. Relaxation exercises may improve your ability to cope with stress and assist you in controlling your life in a less compulsive, hard-driving manner.

TYPE A BEHAVIOR AND MY HEART



I am a Type A personality. I can see below what effect my being Type A has on my risks of having or dying from a heart attack.

RISK OF GETTING A HEART ATTACK

Average risk my age/sex/race: [redacted]

MY RISK:
Risk if I weren't Type A: XXXXXXXXXXXX
XXXXXX

My risk of having a heart attack in the next 15 years is 0.97 times the average for men like me. Since I am Type A, my attainable risk is less than my current risk.

RISK OF DYING FROM A HEART ATTACK

Average risk my age/sex/race: [redacted]

MY RISK:
Risk if I weren't Type A: XXXXXXXXXXXX
XXXXXX

My risk of dying from a heart attack within 15 years is 0.97 times the average for men like me. Since I am Type A, my attainable risk is less than my current risk.

ACTION: Being Type A, it is important for me to realize that I can work hard and still set aside time to relax. Relaxation exercises and learning to avoid irritating situations may help me.

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[redacted]

The Type A behavior pattern may be a style of reacting to stress and conflict which threaten an individual's sense of control. Type A's seem to be always trying to maintain control. Non-Type A's appear to be relatively free of worries about control and therefore do not seem to have the detrimental response.

RESEARCH STUDIES HAVE SHOWN THAT:

Type A's were achievement oriented, and worked at near maximum capacity relative to non-Type A's.

•

Type A's remembered more verbal and pictorial items in recall tests than did non-Type A's.

•

College Student Type A's earned far more academic honors than did the non-Type A students.

•

Type A's suppressed feelings of fatigue to a greater extent than non-Type A's.

•

Type A's became impatient with delays and reported that a time interval of one minute elapsed sooner than did non-Type A's.

•

Type A's did poorly compared to non-Type A's on tasks that required delayed responses. They never waited long enough.

•

Type A's were not uniformly more aggressive than non-Type A's; they became so in response to instigating circumstances—i.e. when someone denigrated their efforts to perform a difficult task.

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SMOKING

WHAT IT IS: Smoking tobacco is a habit. The consequences of smoking have been investigated on a large scale only since the 1950s and research has increasingly shown that inhalation of tobacco smoke is a massive threat to health. About 1,000 different substances are known to be present in tobacco smoke, including a large portion of toxic gases.

WHAT IT DOES: Tobacco smoke is absorbed through your mouth, throat, and lungs. Of the billions of particles inhaled, some 70% remain in the lungs. The irritants in tobacco smoke produce increased mucus secretion, coughing, and closing of small airways. Inhaled *carbon monoxide* acts on the red blood cells to interfere with the transport of oxygen, vital to the functioning of the body tissues. It aggravates chronic lung disease and contributes to arteriosclerosis and coronary heart disease by narrowing the blood vessels.

The *tar* in cigarette smoke contains many cancer-causing substances.

Nicotine stimulates the heart, increases the heart rate and blood pressure, and narrows the blood vessels. As a consequence, the heart has a greater need for oxygen, increasing the danger of a heart attack.

WHY IT MATTERS: As a group, cigarette smokers have a death rate 60-80% greater than nonsmokers. They are more likely than nonsmokers to suffer premature disability and death from a wide variety of diseases. However, research indicates that a great part of the excess risk associated with cigarette smoking is gone within a year or two after quitting.

Smoking contributes to an increased chance of sickness and death from many conditions including the following:

Heart Disease. The risk of coronary heart disease increases proportionately the more you smoke. Your risk decreases if you stop.

Stroke. Smoking increases your risk of suffering and dying from a stroke.

Cancer. Ninety percent of all lung

cancer occurs in smokers. For both men and women, the risk of developing lung cancer is directly related to the number of cigarettes smoked per day, the duration of smoking, the age that smoking began, the depth of inhalation, and the tar and nicotine levels in the cigarette smoked. Your risk of developing lung cancer decreases when you give up smoking. Cigarette, pipe, and cigar smoke also increase the risks of getting cancer of the mouth, throat, larynx, esophagus, pancreas, and bladder.

Chronic Lung Disease. One of the most frequent causes of chronic disability in the United States and one of the major contributors to this disease along with air pollution and occupational exposures is cigarette smoking. Emphysema (a loss of elasticity in the lungs) occurs more frequently in those who smoke cigarettes.

Respiratory Infections. Smokers have more respiratory infections than nonsmokers, and the cases are usually more severe. They also tend to miss more days from work due to respiratory illness.

Smoking and Pregnancy. Babies born to mothers who smoked during pregnancy have a lower birth weight and a higher death rate in their first months of life than babies born to nonsmoking mothers. There is also a greater risk of stillbirths and spontaneous abortions due to smoking during pregnancy.

WHAT YOU CAN DO: Literally *millions* of people have been able to give up smoking. Once they make up their mind to do so, about half of all cigarette smokers can probably stop smoking with only temporary discomfort. Others may suffer intensely for days and weeks Those who are able to give up cigarettes report a great sense of satisfaction and pride in being able to do so.

If you don't smoke now don't start and don't be afraid to ask that your environment be smoke-free.

Help the smoker who wants to stop by supporting his/her decision.

If you do smoke now find some strong reasons for quitting. List the pros and cons.

There is no sure technique for giving up smoking. People smoke for different reasons and what helps one may not work for another. Check out the alternatives. Use some of the numerous books and local resources to provide yourself with information. Find a method of quitting that fits your temperament and set a date. Your expectations may be worse than the real thing.

SMOKING AND MY HEALTH

I reported that I do not now smoke tobacco and I never have. This means I have not directly exposed myself to one of the most important health hazards.

MY RISK OF GETTING A HEART ATTACK

Average risk my age/sex/race:

MY RISK:
Risk for the non-smoker: XXXXXXXXXXXXX
XXXXXXXXXXXXX

MY RISK OF SUFFERING A STROKE

Average risk my age/sex/race:

MY RISK:
Risk for the non-smoker: XXXXXXXXXXXXX
XXXXXXXXXXXXX

MY RISK OF GETTING LUNG CANCER

Average risk my age/sex/race:

MY RISK:
Risk for the non-smoker: XXXX
XXXX

MY RISK OF GETTING ANY OTHER CANCER

Average risk my age/sex/race:

MY RISK:
Risk for the non-smoker: XXXXXXXXXXXX
XXXXXXXXXXXX

MY RISK OF DYING FROM CHRONIC LUNG DISEASE

Average risk my age/sex/race:

MY RISK:
Risk for the non-smoker: XXXXXXXXXXX
XXXXXXXXXXX

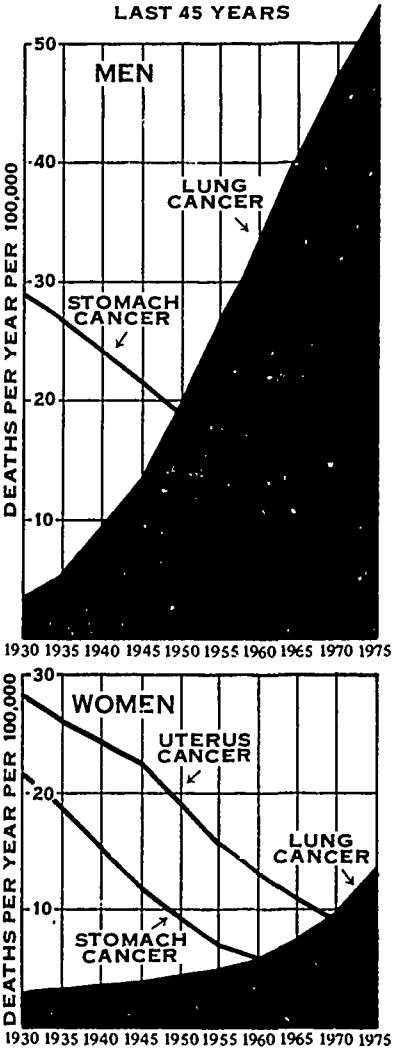
MY OVERALL RISK OF DYING

Average risk my age/sex/race:

MY RISK:
Risk for the non-smoker: XXXXXXXXXXXX
XXXXXXXXXXXX

ACTION: One of the best things I ever did for my health was to decide not to smoke. I can insist on a smoke-free living and working environment to make sure my risks are not increased as a result of other people's smoke.

CHANGES OF SELECTED CANCER DEATH RATES IN THE UNITED STATES OVER THE LAST 45 YEARS



- In both men and women, death rates for lung cancer show a dramatic rise in recent decades—far greater than death rates from other cancers. This increase is due almost exclusively to increased consumption of cigarettes. Women, as they have joined the ranks of smokers, have come a long way toward reaching the higher death rates from lung cancer in men.
- Some cancers show dramatic decreases in death rates. So will lung cancer when more and more men and women quit smoking.

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CANCER

WHAT IT IS: In the United States, 700,000 people a year develop cancer. Eighty percent of these cancers are related either to life-style or environment. Some of your activities, certain aspects of your family history, various chemicals and a few natural substances to which you are exposed, all contribute to your individual risk of getting cancer. Because more and more is becoming known about cancer risks, you have increasing opportunities to prevent cancer by decreasing your risks.

WHAT IT DOES: Cancer risks can be divided into those *biological* factors which you cannot control such as your sex, race, and family background; those factors over which you have no individual control but which *society* collectively can change such as the air you breathe and the food you buy; and those factors which you can control *yourself* such as your smoking, eating, and drinking habits. (In the feedback on the opposite page you can learn about your cancer risks, especially those which you yourself can learn to control.)

WHY IT MATTERS: Each kind of cancer is associated with specific risk indicators. Here are some of the risk indicators.

Smoking. Implicated by itself and in combination with other substances, smoking has become a major factor in increasing cancer risk. For both men and women, the risk of getting *lung* cancer is directly related to smoking. This risk decreases when smoking is stopped. Smoking also contributes to an increased risk of cancer of the *mouth, throat, larynx* (voice box), *esophagus* (gullet), and *bladder.* The risks from occupational exposure to substances such as asbestos and uranium are sometimes multiplied when combined with smoking. (For more information about smoking see page 28 of your Report.)

Alcohol. Consumption of alcohol increases the risk of cancer of

the *mouth, throat,* and *esophagus* and perhaps other organs as well. Alcohol combined with smoking markedly increases the risk of getting these cancers.

Diet. Your eating habits may affect your cancer risk. The American diet is associated with increased risks of *breast* cancer (especially high fat diets) and *bowel* cancer. Current thinking is that a diet of highly refined grain products, which are low in fiber, contributes to bowel cancer. A diet rich in fat may also add to the risk of *intestinal cancer.*

Sunlight and X-rays. Excess ultraviolet radiation (sunlight) is a prime cause of *skin* cancer. Ninety percent of all skin cancers occur on areas of the body which are exposed to the sun such as the face, ears, and back of hands and neck. Excess exposure to X-rays increases the risk of getting *leukemia* and *thyroid* cancer.

Work-Site Related Exposures. An increasing number of substances to which workers have frequent exposure are being found to heighten cancer risk. Sometimes this exposure is limited to the workplace. For example, among asbestos workers approximately 20% of all deaths are due to lung cancer. Sometimes the exposure is extended to an entire community. People in certain areas of New Jersey have a higher than average rate of bladder cancer which has been linked to local chemical industry.

WHAT YOU CAN DO: Don't smoke. Remember that smoking by itself increases your cancer risk and multiplies your risk when it is combined with other risks.

Watch what you eat. Adopt dietary habits which include more fish and poultry, grains, fresh fruits and vegetables, and less fats and red meats.

Avoid drinking large amounts of alcohol.

Avoid undue exposure to the sun.

Learn the particular risks related to your job or area where you live. Avoid unnecessary exposure to hazardous chemicals or other substances.

Learn the seven warning signals which may indicate cancer. Early recognition of cancer may save your life!

MY RISK OF CANCER

MY RISK OF GETTING CANCER

Average risk my age/sex/race: [redacted]

MY RISK: XXXXXXXX (

My attainable risk: XXXXXXXXX

My risk of getting ill with cancer within 15 years is much below average for a man my age.

MY RISK OF DYING FROM CANCER

Average risk my age/sex/race: [redacted]

MY RISK: XXXXXXXXX

My attainable risk: XXXXXXXXX

My risk of dying from cancer within 15 years is much below average for a man my age.

TYPE OF CANCER: INDICATORS WHICH INCREASE MY RISK:

THESE ARE INDICATORS WHICH DECREASE MY RISK OF CANCER:

Not smoking, Not drinking alcohol, No history of predisposing disease, No family history of risk relevant cancer, No predisposing medical treatments and No occupational exposure

ACTION: To keep my cancer risks low in the future, I may find helpful information in E. Whelan's book: PREVENTING CANCER, Norton, 1977.

4

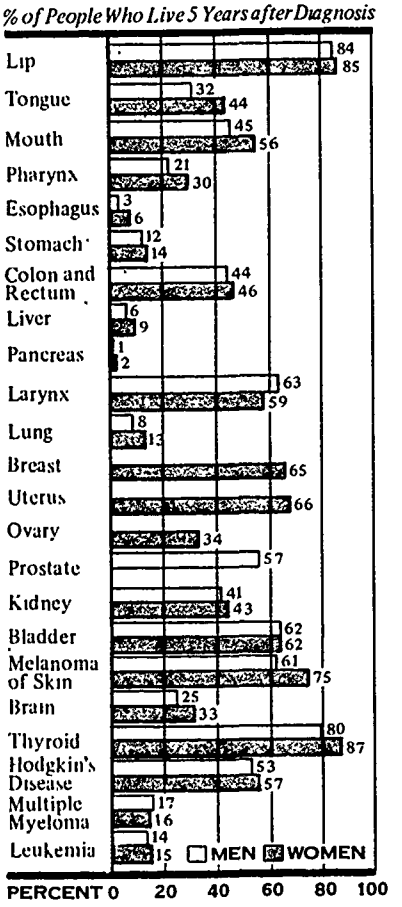
KNOW THE SEVEN WARNING SIGNALS OF CANCER

Change in bowel or bladder habits.
A sore that does not heal.
Unusual bleeding or discharge.
Thickening or lump in breast or elsewhere.
Indigestion, difficulty in swallowing.
Obvious change in wart or mole.
Nagging cough or hoarseness.

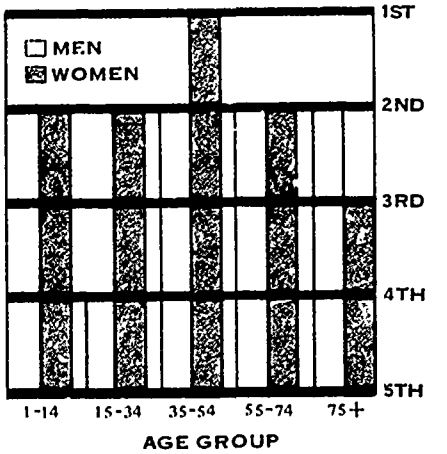
If you have a warning signal, see your doctor

FIVE-YEAR SURVIVAL RATES FOR CANCER SITES BY SEX, 1965-69.

% of People Who Live 5 Years after Diagnosis



HOW CANCER RANKS AS A CAUSE OF DEATH FOR DIFFERENT AGES



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ALCOHOL

WHAT IT IS: Alcohol is a central nervous system drug. Although seven out of every ten American adults use it, there is no universal American drinking pattern and no common attitude toward alcoholic beverages. Alcohol can be used to induce relaxation after a long day, to enliven a social occasion with friends and family, or to enhance a meal.

WHAT IT DOES: Many people drink alcoholic beverages to experience pleasurable feelings and to cope with stress. However, when taken in large amounts, alcohol has a depressant effect, typically producing fatigue, sleepiness, and ultimately stupor. It is not yet known how alcohol works to intoxicate, but it has been shown that alcohol's effects on behavior and health depend on *how much* and *how often* you drink. Reflexes, self-control, and judgment become increasingly impaired as greater amounts of alcohol are consumed. Heavy drinking over a significant period of time can result in malnutrition and permanent damage to body organs, especially the liver and the nervous system. Alcoholism is a chronic and progressive disease that can damage all organ systems of the body.

WHY IT MATTERS: Alcohol is more abused than any other drug in the United States. An estimated 7% of the adult population in America seriously abuses alcohol.

Most alcoholics are found in the work force and the home, not on Skid Row. It has been estimated that as many as 5% of the nation's work force are alcoholics and almost another 5% are serious alcohol abusers.

Less than responsible use of alcohol has acute and chronic effects.

The *acute* effects include:

Motor Vehicle Accidents. Alcohol is the number one highway killer. Alcohol misuse results in about one-half of all highway deaths including one-quarter of pedestrian deaths.

Violence. Violence involving others is often associated with the recent intake of large amounts of alcohol. Chronic heavy drinking, by contrast, tends to be associated with self-destructive behavior such as depression and suicide.

The *chronic* effects include:

Cirrhosis of the Liver. Hardening of the liver is a major cause of incapacitating illness and premature death in alcoholics. Its occurrence is more frequent as alcohol consumption increases.

Cancer. Strong evidence has emerged that alcohol consumption increases the risk of cancer, particularly of the mouth, esophagus, pharynx, and larynx. Cancer of the esophagus is up to 17 times greater in alcoholics than among non-drinkers. There is evidence to suggest that alcohol used in conjunction with cigarettes is a particularly dangerous combination

Pneumonia. The risk of dying from pneumonia has markedly increased in heavy drinkers, possibly due to decreased resistance to infection or to a reduction in the lungs' capacity to cleanse themselves.

Family and Mental Problems. These are often alcohol-related. Almost one in five persons has a family member or friend who drinks too much. Although it is not documented how often excessive drinking is the cause and how often it is the effect, it is dramatically evident that problems such as illness, family discord, financial difficulties and job difficulties often go hand-in-hand with alcohol abuse.

WHAT YOU CAN DO: If you choose to use alcohol, use it wisely. Recognize and avoid situations where alcohol becomes the main focus rather than an adjunct to an activity.

Avoid alcohol if you are taking other drugs.

Set limits to your consumption of alcohol to protect your dignity and self-respect.

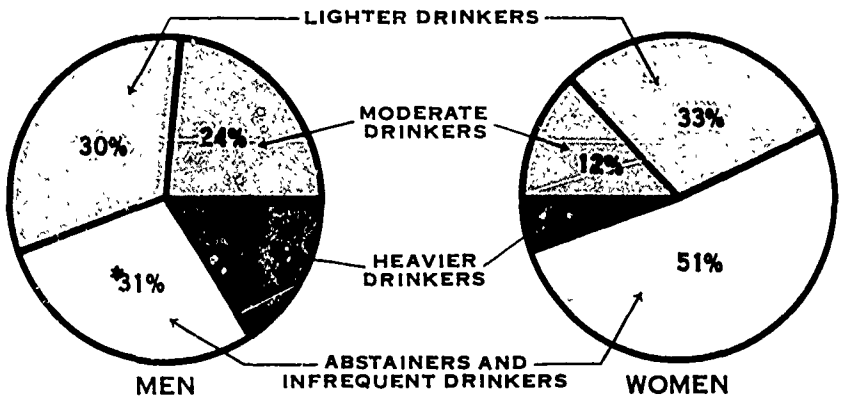
Provide alcohol responsibly, if at all. Respect the person who chooses to abstain or drink in moderation.

Provide food containing proteins such as dairy products, fish, and meats if you serve alcohol

Never drive after having consumed alcohol. Don't allow your family or friends to drive after drinking either.

If you see the symptoms of alcoholism in yourself or in someone close to you, seek help immediately. Your physician, clergyman, or local Alcoholic Anonymous group will be able to advise you.

HOW MY DRINKING HABITS AFFECT MY HEALTH



I reported that I never or hardly ever drink alcoholic beverages. I am an abstainer or an infrequent drinker compared to other men like me.

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXX
Risk for the non-drinker: XXXXXX

My chances of dying within 10 years in a motor vehicle accident are 0.32 times the average. My attainable risk is the same as my current risk.

Average risk my age/sex/race: [redacted]
MY RISK: XX
Risk for the non-drinker: XX

My chances of dying within 10 years from cirrhosis of the liver are 0.09 times the average for men like me.

Average risk my age/sex/race: [redacted]
MY RISK: XXXXXXXXXX
Risk for the non-drinker: XXXXXXXXXX

My chances of dying from cancer within 10 years are 0.62 times the average for men like me. My attainable risk is the same as my current risk.

Average risk my age/sex/race [redacted]
MY RISK: XXXXXXXXXXX
Risk for the non-drinker: XXXXXXXXXXX

My chances of dying from pneumonia within 10 years are 0.69 times average for men like me. My attainable risk is the same as my current risk.

ACTION:
By not drinking alcohol I am acting to improve and maintain my health.

+

WARNING SIGNS:

ANY ONE OR MORE OF THE FOLLOWING SIGNS MAY INDICATE A DRINKING PROBLEM

Gulping drinks for the effect that rapid drinking produces

•

Starting the day with a drink

•

Drinking alone, from a desire to escape reality or boredom or loneliness

•

Alcohol-taking behavior criticized by an employer, spouse, or others, and absenteeism or impaired job performance because of drinking

•

Rationalizing about drinking behavior, characterized by such comments as "I just need one more to relax," or "How about one for the road?"

•

Marked personality and behavioral change after taking one or more drinks

•

Frequent overdosing with alcohol, or drunkeness

•

Experiencing "blackouts"—alcohol-induced amnesia

•

Drinking to relieve hangovers, thereby perpetuating a vicious cycle: The more one drinks, the worse one feels, the more one drinks

•

Requiring medical or hospital attention, or having frequent complaints, as a result of alcohol-taking

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VEHICLE ACCIDENTS

WHAT IT IS: There are over 16 million motor vehicle accidents in the United States each year which claim approximately 47,000 lives and cause over 5 million injuries.

Your risks of being involved in, or of being injured from, or of dying in a motor vehicle accident are very much under your control.

The two major contributors to motor vehicle accidents and to the serious injury and death they may cause are (1) driving under the influence of alcohol and (2) avoiding the use of safety belts.

WHAT IT DOES: Alcohol. Drinking and driving don't mix. If you drink and drive, the chance of your being responsible for a fatal car accident increases with the amount you have consumed. When you have more than a small amount of alcohol in your blood, your reflexes are slowed. Your reactions to emergencies, your coordination, and your judgment are impaired. All these functions are vital to handling an automobile responsibly.

Safety Belts. By studying automobile accidents, experts have found that it is usually the *second collision* that injures and kills people. The first collision occurs when one car hits another car or object. The second collision occurs when individuals not wearing seat belts are thrown into the car's windshield, steering wheel, doors, or dashboard, as well as into other people in the car. Second collisions involving steering wheels and windshields account for 38% of fatalities in automobile crashes.

Another kind of second collision occurs when the unbelted occupants are thrown out of the car. Your chances of being killed in a motor vehicle accident are 25 times greater if you are thrown from the car.

WHY IT MATTERS: Alcohol. Intoxicated drivers cause about 5-10% of nonserious accidents and about 35% of crashes with serious injuries. Approximately half of all fatally injured drivers in accidents are drunk. A heavy drinker is five times more likely to die from an automobile accident than the average person.

Safety Belts. In a recent study conducted in widely separated areas of the United States, trained accident investigation teams analyzed over 15,000 serious automobile accidents. The results of this study show that *lap belts* are 31% effective and *lap-shoulder* belts are 57% effective in preventing moderate-to-fatal injuries in automobile accidents. This means that if you are involved in a crash in which you are wearing a lap-shoulder belt, you are 57% less likely to be injured or killed than if you are not wearing any kind of safety belt.

Fastened safety belts often keep minor injuries from becoming major ones and prevent other injuries altogether.

How do seat belts protect you? During a crash, fastened safety belts absorb the potentially damaging forces of deceleration and distribute the pressure over a large area of your body. It is important to fasten your safety belt for short trips of less than 25 miles as well as for long trips at high speeds on freeways or turnpikes. The facts are that three out of four accidents occur within 25 miles of home, 80% of all accidents occur at speeds of less than 40 mph, and the accident rate is much greater on city streets than on highways.

WHAT YOU CAN DO: Always wear your seat belts, no matter how far you are traveling or where you are seated in the car. Fatalities have been recorded at speeds as low as 12 mph.

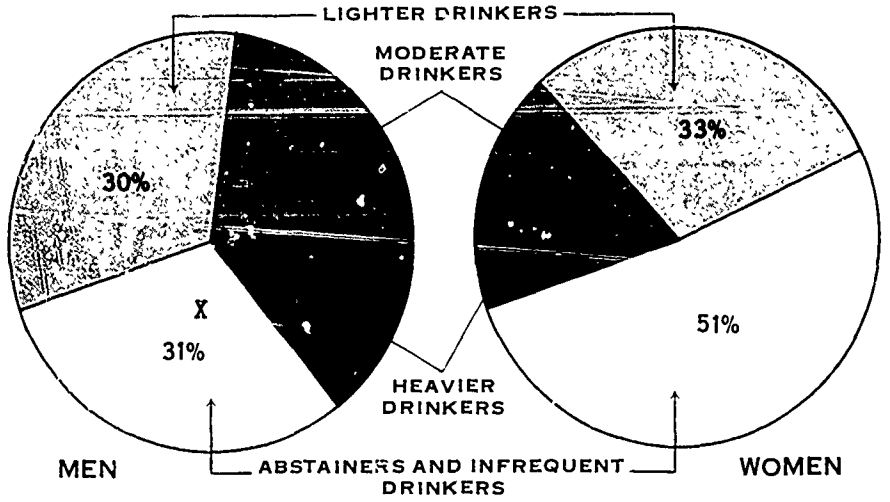
If you drive with children, make sure that each child has his/her own seat and that the seat belt is securely fastened.

Never drive after drinking alcohol and don't allow family members or friends to drink and drive either.

Recognize that *as a host* you are responsible for preventing drunken driving. Provide transportation or overnight accommodations for those who are unable to drive safely.

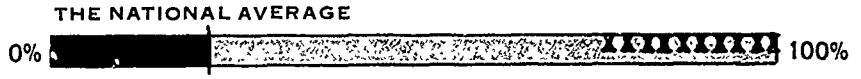
MOTOR VEHICLE ACCIDENTS, ALCOHOL AND SAFETY BELTS

MY ALCOHOL CONSUMPTION COMPARED TO OTHERS



I reported that I do not drink. I should note carefully how this lowers my risk of dying from a motor vehicle accident.

MY SAFETY BELT USAGE COMPARED TO THE NATIONAL AVERAGE



I reported that I wear seat belts more than 75% of the time and usually use a lap-shoulder belt. It has been shown that lap-shoulder belts give me more protection in a collision than lap belts alone.

RISK OF DYING FROM MOTOR VEHICLE ACCIDENT

MY RISK: XXXXX

If I don't drink: XXXXX

If I always wear seat belts: XXXXX

If I don't drink & always wear seat belts: XXXXX

Because I wear seat belts most of the time and never drive after drinking my risk of dying in the next ten years from a motor vehicle accident is reduced considerably.

ACTION: Since I travel 11,000 - 20,000 miles a year in a motor vehicle, my driving habits are important to the way I take care of myself. As a passenger my risk is decreased if I wear a seat belt and am with a driver who has a low risk.

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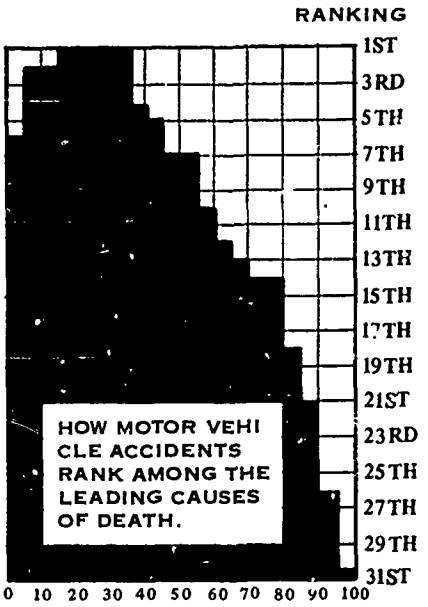
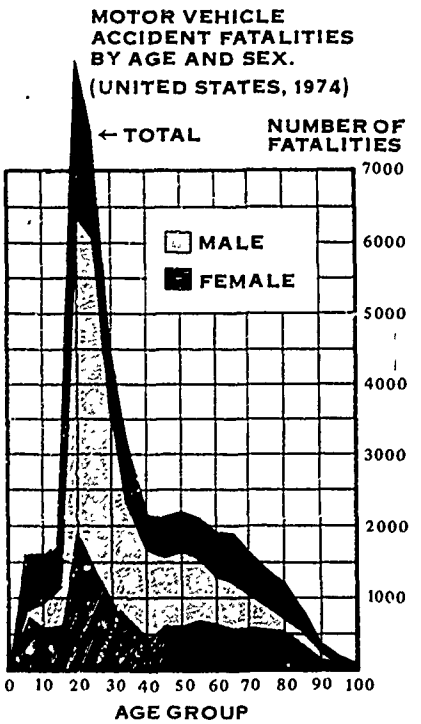


The graph shows how motor vehicle accidents rank as a leading cause of death in my age group. For example, at age 37 death from a motor vehicle accident ranks 4th while at age 20 motor vehicle accidents are the leading cause of death.

If every driver and passenger in the U.S. would wear safety belts during every trip in a car, each year:

- About 15,000 lives would be saved;
- The severity of almost 4 million personal injuries caused by motor vehicle accidents would be reduced;
- 6½ billion dollars in costs incurred through motor vehicle accidents could be substantially reduced.



HEALTH AGE

How healthy are you? Medicine is increasingly able to tell if you are sick. It is not as good at determining how healthy you are. A routine physical is designed to find early signs of illness rather than existing indications of health.

To know how healthy you are, you need to know your health risks. (See page 4 of your Report for more information on health risks.) Estimating the chances of your dying or becoming ill in the next ten years is one way of measuring your health. On the next page you will find (1) your risk of death compared to that of an average person, and (2) your *attainable risk*—the lowest risk you can attain if you take care of all the things you can control to improve your health.

Your Health Age is the age of an average person of your same sex and race who has the same mortality risk as you have. In other words, it is your age with respect to your health; the healthier you are, the lower your mortality risk and the lower your Health Age.

A higher Health Age doesn't only mean a higher risk of disease and death and a lower life expectancy, it also means that important structures and functions of your body deteriorate faster causing you to age sooner and faster than you need to.

If your Health Age is *about the same* as your chronological age, your risk is about that of the average person your same age, sex, and race. Keep in mind though, that average health is not good health. It includes people with poor health habits and people who are seriously impaired or ill.

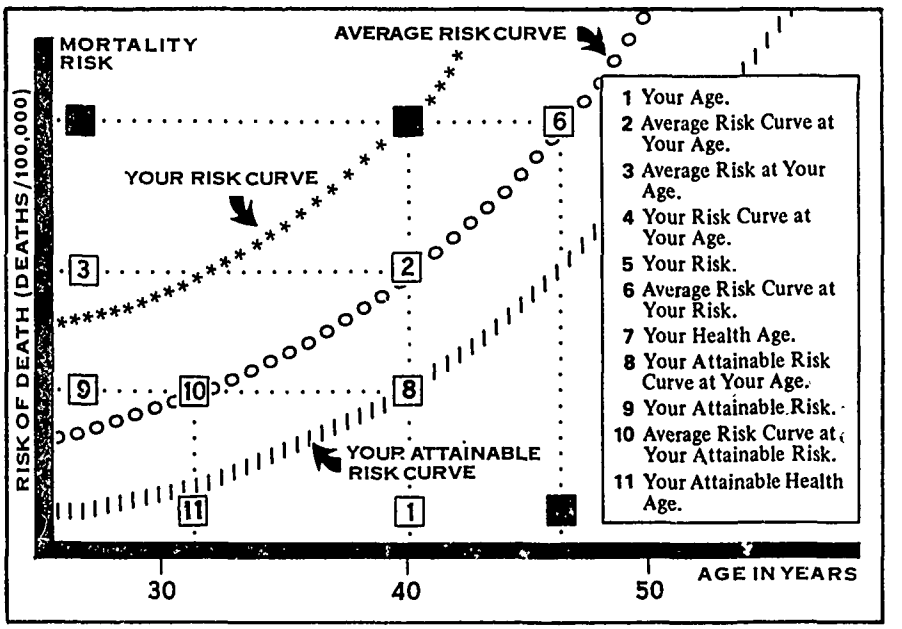
If your Health Age is *higher* than your chronological age, your mortality risk is greater than that of the average person your same age, sex, and race. This Report is designed to help you identify factors in your medical background or health related habits that are responsible for your increased risk. You have already taken a big step toward reducing your risks by taking the Health Self-Appraisal. You can do more by changing your habits and seeking preventive medical check-ups.

If your Health Age is *lower* than your chronological age, your mortality risk is less than that of the average person your same age, sex, and race. Comparing your Health Age with your attainable Health Age will tell you how far you have come in decreasing your risks.

Check page 45 for the list of risks that increase *your* Health Age. Turn to the Resources section on page 44 for suggestions about ways you can reduce your risks and decrease your Health Age.

The diagram on the next page illustrates the relationship between *your* risk and *your* Health Age.

RISK AND HEALTH AGE

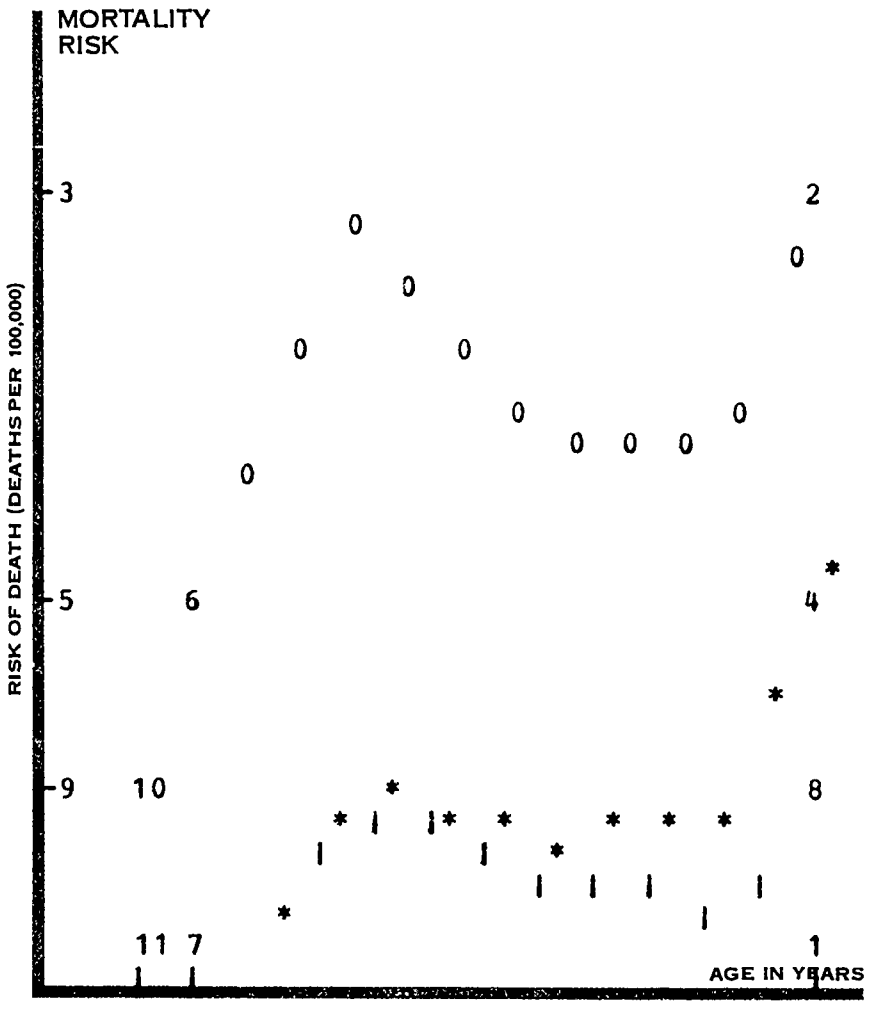


The following step-by-step sequence helps you explore the relationship of mortality risk and Health Age in more detail.

Suppose you are 40 years old and your mortality risk is higher than average. The diagram on this page shows your data.

- Find your age (40 years in this example) at point (1).
- Move from (1) to the average risk curve for your age at point (2).
- Move from (2) to the risk scale and find the *average mortality risk* for 40-year-old people at point (3).
- To find your mortality risk, move from your age at point (1) to your risk curve at (4) and find your risk on the risk scale at (5). In this example it is higher than the average
- To find your *Health Age*, start at point (5) and move to the right until you reach point (6) on the average risk curve, then move down to point (7), your Health Age.
- To find your *attainable risk*, begin at your age (1) and move to point (8), the attainable risk curve at your age, then move to point (9) on the risk scale to find your attainable risk.
- Move from point (9) to (10) on the average risk curve. From there move down to (11) This is your attainable Health Age.

MY HEALTH AGE AND MORTALITY RISK



MY HEALTH AGE IS 15 YEARS.

Even though my health age is less than my actual age, I can still do better. If I work to lower my risks still more, my health age could be 14 years. I can learn more about this on page 39 and page 43.

RISK OF DEATH

Average risk my age/sex/race.

MY RISK: XXXXXXXXXXX

My attainable risk: XXXXXXXXX

ACTION: Since my health age is greater than my attainable health age, there are things I can do to help myself such as losing weight, improving my diet and learning to relax. I can decide which risks I want to work on and make a commitment to myself on page 45.

GRAPH KEY:

******** MY RISK CURVE

oooooooooo AVERAGE RISK CURVE

|||||||||| MY ATTAINABLE RISK CURVE

1) My Age.
2) Average Risk Curve at My Age.
3) Average Risk at My Age.
4) My Risk Curve at My Age.
5) My Risk.
6) Average Risk Curve at My Risk.
7) My Health Age.
8) My Attainable Risk Curve at My Age.
9) My Attainable Risk.
10) Average Risk Curve at My Attainable Risk.
11) My Attainable Health Age.

My risk curve reflects the specific data I have provided about my medical background and health habits.

My attainable risk curve is based on my medical background, but assumes that I have controlled to my maximum benefit things that affect my health.

The average risk curve is based on the U.S. Vital Statistics and shows for each age, sex, and race how many people died and from what causes.

THINGS I CAN DO TO FEEL BETTER AND LIVE LONGER:

Regularly sleep 7 or 8 hours a night.
Eat breakfast almost every day.
Avoid being overweight.
Rarely eat between meals.
Do not smoke.
Drink alcohol only in moderation.
Have at least a moderate level of exercise.

Belloc & Breslow, 1972

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LIFE EXPECTANCY

WHAT IT IS: The previous page describes your Health Age. Another way of looking at your state of health is life expectancy, the remaining lifetime for the average person of your age, sex, and race.

Your life expectancy is calculated to reflect those things that you do that make you healthier and contribute to a longer life as well as those aspects of your behavior that may make you less healthy and shorten your lifespan. Factors like whether or not you smoke, drink, exercise regularly, or are overweight influence your life expectancy.

Your life expectancy can be determined in different ways. Among the most frequently used estimates are the average remaining lifetime (in years) for persons of a certain age (life expectancy in the strict sense) and the age at which half of the persons of a certain age will still be alive. The latter method was used in the computation of your life expectancy.

The computation starts with *your* present overall risk of death derived from your responses to the Health Questionnaire. Using this risk estimate, the computer calculates the number of people of your age and risk who will still be alive year by year into the future. The number of years in which exactly 50% of your age and risk group would still be alive is added to your present age to determine your life expectancy.

WHAT IT DOES: Knowing your life expectancy allows you to project the effects of your current life-style onto your future health. (Your Health Age lets you see how these same factors affect your health today.)

Life expectancy does not predict how many years you personally have to live. It is a measure which applies to people of your age, sex, race, and risk in general. For example, half of the people who have a life expectancy of 75 years will not live to their 75th birthday. The other half will live beyond 75 years. If *your* life expectancy, based on your responses to the Health Questionnaire (see opposite page), is lower than the norm for your group, chances are you can work to lengthen your life, by reducing your risks.

Use this information to estimate how your current life-style is likely to affect your future health.

WHY IT MATTERS: Your behavior can have a marked effect on your longevity. For example, the graph on this page shows the effect that smoking has on a 25-year-old man's life expectancy.

A recent study of several thousand people in California showed that on the average, at age 45, men had extended their life expectancy by eleven years and women by seven years if they *exercised regularly,* maintained a proper *weight,* got at least seven hours *sleep* every night, ate *breakfast* regularly, didn't *smoke,* had only a few *drinks* a week, and didn't *eat* between meals.

WHAT YOU CAN DO: You can exercise some control over your life expectancy. Study your health assets and your risks. Decide for yourself what you *want* to do and what you *can* do to change them. You may wish to review your risks in detail by again referring to the list on the opposite page. It may also be helpful for you to study page 43 for the synthesis of your results. Remember that even small changes in what you do now may bring large dividends in the future.

HOW THE HEALTH APPRAISAL ESTIMATES YOUR LIFE EXPECTANCY

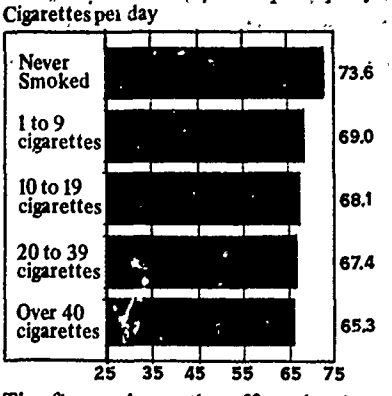
How long persons are likely to live can be expressed in different ways. Among the most frequently used estimates are:

- The average remaining lifetime (in years) for persons of a certain age (life expectancy in the strict sense).
- The age at which half of the persons of a certain age will still be alive.

Your life expectancy is computed by this latter method.

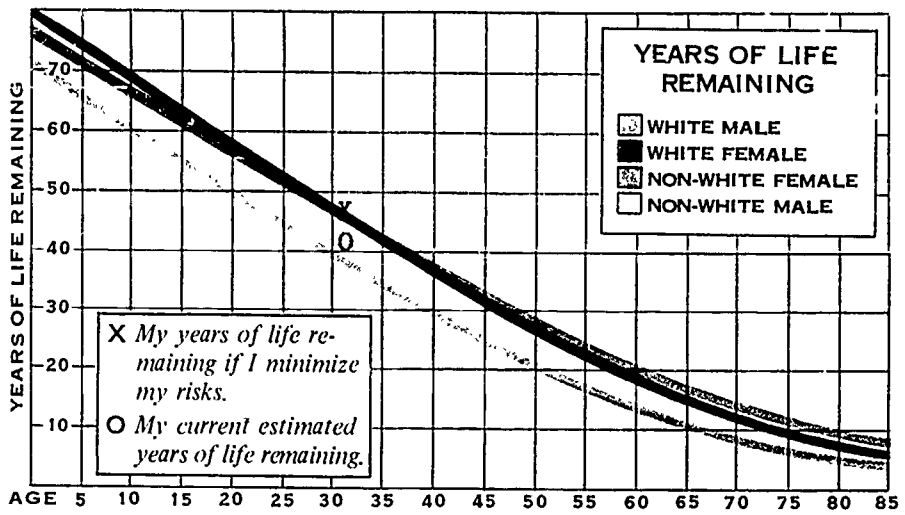
The computation starts with your present overall risk of death derived from your responses to the Health Appraisal questionnaire. Using this risk estimate the computer calculates year by year into the future, how many people in your age and risk group will still be alive. When the time is reached when exactly 50% or half of your age and risk group would still be alive, that number of years is added to your present age to give your life expectancy.

SMOKING IS A GOOD EXAMPLE OF HOW YOUR BEHAVIOR AFFECTS YOUR LIFE EXPECTANCY



The figure shows the effect that increasing amounts of cigarette smoke has on a 25-year-old male's life expectancy. A man who smokes one to two packs of cigarettes a day has a life expectancy of 67.4 years, six years less than one who has never smoked.

MY LIFE EXPECTANCY AND HEALTH RISKS



By looking at the graph above I can see that my estimated life expectancy is 74 years which at my present age of 32 amounts to 42 years of life remaining. My attainable life expectancy is 80 years which, at my present age of 32, amounts to 48 years of life remaining.

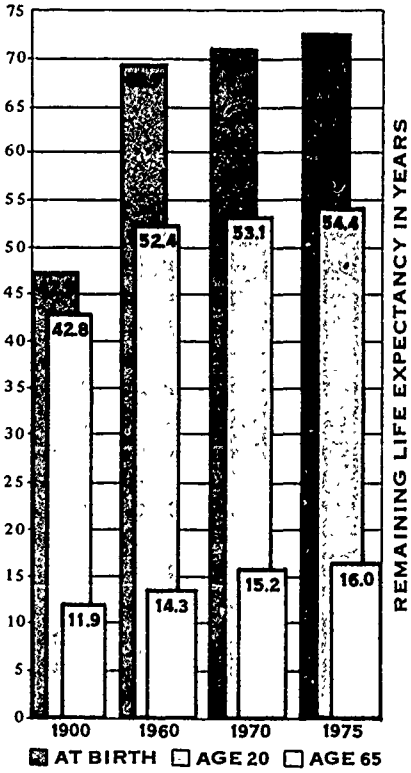
Major risks to my health--
Risks I can do something about

The following are risk indicators which tend to reduce my life expectancy to below what it could be, but I can do something about them-- My weight; my cholesterol level; being a Type A person and my blood pressure. (I can check the lower right-hand corner of this page for more information.)

Risks I am dealing with effectively

My life expectancy is greater than it would otherwise be because I exercise, I have a positive sense of well-being, I wear my seatbelts consistently and I do not smoke cigarettes.

LIFE EXPECTANCY AT BIRTH, AGE 20 AND AGE 65 (1900-1975)



As you can see, life expectancy has been increasing since 1900, and continues to rise – note the increase of 1975 over that of 1970 (see above).

MY RISKS: The data I reported place me at greater risk than average in the areas checked below. I can read about them in the pages indicated below.

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HEALTH ATTITUDES

WHAT IT IS: Your health attitudes are ideas and beliefs you have about your health. Although you may not be conscious of them, they play an important role in determining how you behave regarding your health and the health of your family. If you understand why you behave in certain ways and if your attitudes are well-founded, you will be more likely to take charge of your health, avoid preventable suffering, and enhance your well-being.

If your attitudes are based on superstition and misinformation, if reality is too painful to confront, or if you think there is little you can do to improve your health, you may not take care of yourself as well as you could.

WHAT IT DOES: Among the most important themes in your Report are how much you care about your health and how much control you think you have over your health.

On the next page you will find the results of your health attitude assessment which is derived from the Health Belief Model. Researchers have used the model for many years to estimate the degree to which you are likely to take charge of your health and act to stay well. This estimate incorporates your perceptions about yourself and your health, summarized in four basic health attitudes.

Perceived Susceptibility. How vulnerable do you think you are to sickness and disease? Before you can take action against it, you have to believe that you are vulnerable.

Perceived Severity. How serious do you think the consequences would be if you did get sick? You may not act to prevent sickness or disease if you don't think that getting sick would have serious consequences for you and your family.

Perceived Benefits of Preventive Action. How much control do you have over the course of your health, and how much can you do to prevent sickness and disease? You may not act unless you feel you can do something to prevent illness.

Perceived Barriers to Preventive Action. How willing are you to do what is necessary to avoid sickness

and disease? You need to be willing to make the necessary physical, financial, or psychological commitments to staying healthy.

WHY IT MATTERS: If you care about your health, and want to strengthen your ability to stay well, you need to line up your health attitudes with reality. For example, despite increased publicity, 50 million Americans are still smoking and many thousands die yearly from diseases related to smoking such as lung cancer and heart disease. Chances are, at least one of the four conditions identified by the Health Belief Model has not been satisfied by those who continue to smoke despite knowledge of the risks to their health. They may not consider themselves personally susceptible to the diseases caused by smoking, they may not think that the consequences of smoking will be that serious for them, they perhaps feel that it won't help to stop smoking, or they may be unwilling to pay the costs of quitting. Each of these arguments can be easily countered. Once you are able to identify your own health attitudes and behaviors, you can attempt to modify them.

WHAT YOU CAN DO: Examine your results on the facing page to see how your health attitudes compare with those of other people.

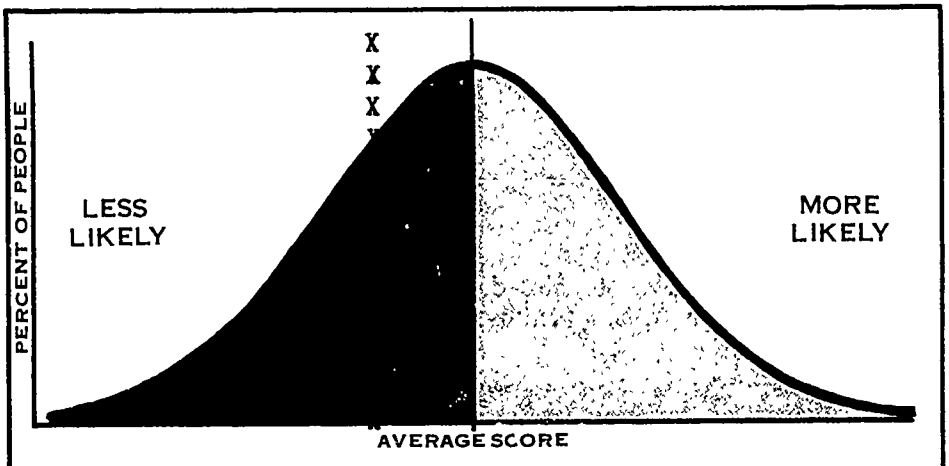
Check to see if your attitudes about your health are consistent with what you already know about the state of your health and with what you learned from your Report The farther your scores lean toward the right or left end of the scale, the more important it is for you to make sure that your health attitude is in line with what is really the state of your health. For example, if your perception of vulnerability to disease is low, check your risks and medical history to see whether your optimism is justified. If your risks are *not* low, your health attitudes may be inappropriate and keep you from taking necessary action to improve your risks.

Try to determine *why* you maintain behaviors that you know are harmful to your health and find what is preventing you from changing them.

Systematically and realistically think about what it would mean to you and your family if you were to become seriously ill.

Use the information and suggested resources in your Report to help you take positive action to change your behavior and reduce your health risks.

COMPARED TO OTHERS, HOW LIKELY AM I TO BETTER MY HEALTH NOW?



My score, 550 suggests that I am as likely to act to improve my health and to follow through on the plans that I make as most men like me.

LOWER PERCEIVED SUSCEPTIBILITY HIGHER
Average: XXXXXXXXXXXXXXXXX
My score: XXXXXXXX

I feel that I have less chance of getting sick than most people do.

LESS SERIOUS PERCEIVED SEVERITY MORE SERIOUS
Average: XXXXXXXXXXXXXXXXX
My score: XXXXXXXXXXXXXXXX

Compared to others, I view the consequences for me of major illness as serious.

LESS BENEFICIAL MORE BENEFICIAL
Average: XXXXXXXXXXXXXXXXX
My score: XXXXXXXXXXXXXXXXXXXX

I feel as strongly as most people that there are things I can do to prevent illness.

LESS MORE
Average: XXXXXXXXXXXXXXXXX
My score: XXXXXXXXXXXXXXXXXXXX

I find reasons for not acting to prevent illness to about the same extent as others like me.

ACTION: My feeling less vulnerable to illness than most people is consistent with my lower than average health risks. I can play quite an active role in taking care of my health. Using the information from my report in my plan for lowering my risks and further improving my health is an important next step.

+

Courtesy, National Gallery of Art

Etching by M.C. Escher

The way we see things is not always the way they really are. Is there a difference between the way you *think* about your health and what you *do* for your health?

CCCCCCCC

BEHAVIOR CHANGE

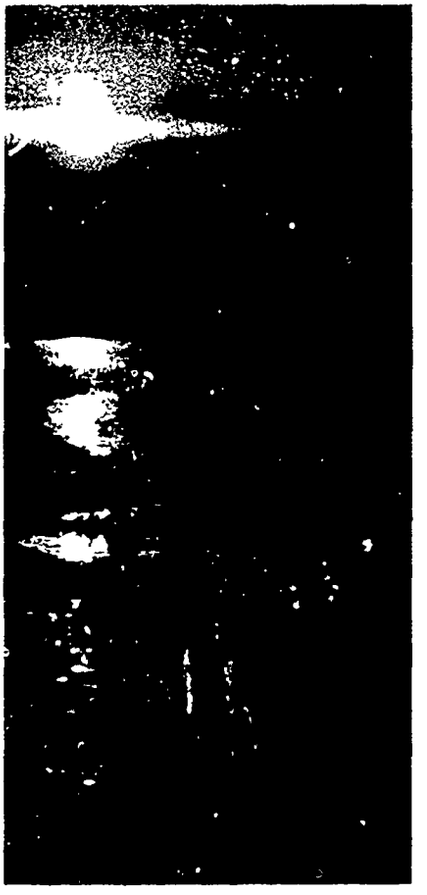
Now that you are nearing the end of your Health Self-Appraisal Report, you have undoubtedly identified many things that can protect your health. Before completing the *Good-Health Contract* on page 45, think seriously about the pros and cons of decisions to decrease your risks and improve your health.

You may hesitate to improve your health for many reasons. However, taking steps to change behavior which affects your health risks will change the length and quality of your life. You can control many of your risks by learning to control tension, by not smoking, by losing weight, by improving your diet, and by continuing with all of the healthy things you do now. Check the opposite page and the contract for more about your risks and strengths.

Changing Your Behavior. Many people put taking care of their health down low on their list of priorities; it is often too much trouble or there is not enough time. But does it make sense to reach short term goals and not be able to enjoy the future? Sometimes people take care of themselves only as a favor to others. For example, a woman often gives up smoking when she is pregnant, or a father may take steps to care for himself in order to fulfill his responsibilities to his children until they are self-sufficient. Are you such a person?

If you think you should change some of your behaviors but don't know how to go about it, try to get help. Turn to the Resources section on page 44 of your Report and use the information as a step towards a healthier future.

You may feel fine now and think there is nothing more you need to do. But check the next page anyway for suggestions that may make you feel even better. If you are already doing all you can to stay healthy, don't stop.



Feeling Healthy. Next time you go swimming or walking, or take a vacation, or cut down on cigarettes concentrate on *how it feels.* If you are aware of how you feel when you pursue a healthy activity, you will be likely to do it more often. People have reported different "feeling good" signs, for example:

- feeling in control of your body,
- feeling aware of your body as a whole,
- feeling confident,
- feeling optimistic,
- feeling sensitive to the health of others,
- feeling mentally calm and alert,
- feeling relaxed and rested,
- feeling enjoyment even under stress, and
- feeling active.

Which ones have you experienced?

Changing Your Health Habits. Trying to eliminate old habits and assume new, healthy ones is not the easiest thing to do. It often requires systematic change and an effort to reeducate yourself. Try to take the following steps toward changing your health habits.

Identify behaviors that are harmful to your health and decide which behaviors you want to change.

Explore the strategy or strategies of behavior change that work for you.

Replace your bad habits with an attractive activity you enjoy doing, which interferes with and takes your mind off of the habit you want to break. For example, it's difficult to exercise regularly and to be a smoker as well. Smoking interferes with breathing and stamina. Taking up exercise has been found to lead to a significant decrease in smoking.

Become aware of the circumstances under which the behavior you want to change occurs: its timing, its trigger, its function. For example, do you eat more when you're down? Do you increase Type A behavior when you have experienced failure? Often, understanding your habit is a key to correcting it.

Get help from your family and friends. They can help by praising your success, directing your attention away from old habits, supporting and encouraging you when you fail, and joining you in activities that replace those old habits.

MY HEALTH APPRAISAL SUMMARY

I can now review a summary of my Health Self-Appraisal results. This contains many of the most important aspects of my report.

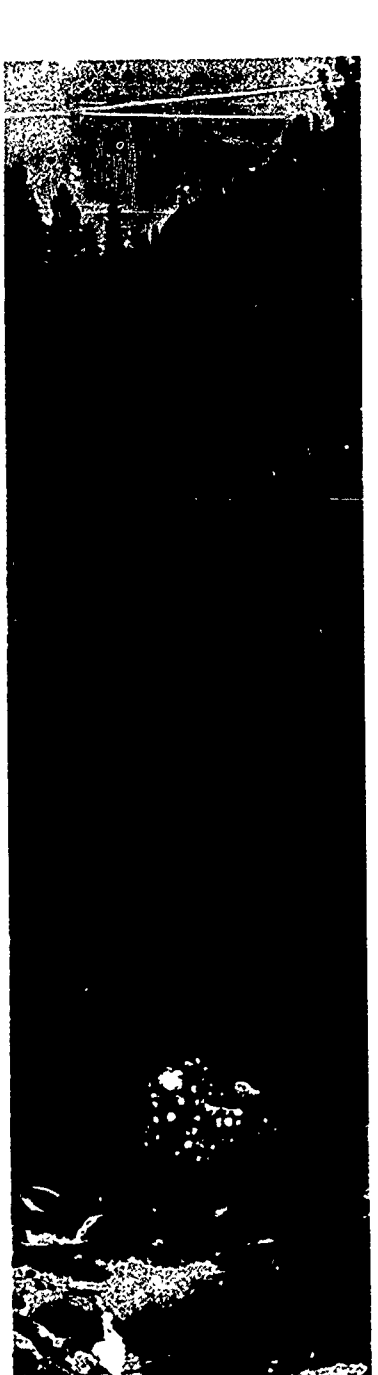
I am a 32 year old man. My health age is 15. My attainable health age is 14. My life expectancy is 74. My attainable life expectancy is 80. I have a high level of emotional well-being.

My mental well-being-- Recently I have had about the same amount of stress and change in my life as most people. In times of stress and change I have about the same number of friends and family I can turn to for comfort and support as most people. I cope with stress and change mostly in an adaptive manner. I have been experiencing much happiness and emotional well-being recently.

My risks-- I have discovered that I have an about average risk of having a heart attack, suffering a stroke, dying from a heart attack and dying from a stroke. I have discovered that I have a below average risk of getting lung cancer, getting cancers other than lung cancer, dying from chronic lung disease, dying from a motor vehicle accident, dying from cirrhosis and dying from pneumonia.

My accomplishments-- I have many positive aspects in my risk appraisal. I exercise a great deal. I have never smoked cigarettes, I wear seatbelts more than 75% of the time, I do not drink to excess, I eat breakfast almost every day and I had a vacation in the last year.

The opportunities-- I have seen the opportunities I have to reduce my risks. But there are additional opportunities. These are some of the steps I can take. I can get more sleep; I can try to stop eating between meals; I can learn what my blood pressure is; I can find out my cholesterol level and I can find out my HDL level.



CCCCCCCCC

RESOURCES

RISK AREA	ACTION OPTIONS	RESOURCES
OVERWEIGHT	Lose weight • Improve diet • Learn about exercise and nutrition	Membership groups • Courses and books • Programs at work • Clinics recommended by your local health department
CHOLESTEROL	Decrease saturated fat intake • Decrease cholesterol intake • Maintain cholesterol at lowest possible level • Exercise	Labels on food packages • Guide books on cholesterol content in foods • Recipes and meal planning tips from American Heart Association
ALCOHOL	Reduce or eliminate alcohol consumption • Seek treatment • Avoid driving after drinking	Alcoholics Anonymous • Alanon (for families of the alcoholic) • Your doctor • Local Mental Health Association • Programs at your worksite
SMOKING	Stop smoking • Assert your desire not to breathe other people's smoke • Exercise	Smoking cessation clinics recommended by your local health department • Programs offered by lung, heart, or cancer associations
LACK OF EXERCISE	Get more exercise • Make exercise an enjoyable habit • Make the active choice (take stairs instead of elevators, walk instead of ride; etc.)	Your membership groups • Courses and books • Local recreation centers
STRESS	Control stress reaction • Control Type A Behavior • Learn to relax • Learn to anticipate and cope with stressful situations • Exercise	Courses in relaxation training • Books on how to relax • Exercise programs
HIGH BLOOD PRESSURE	Decrease blood pressure as much as possible • Monitor your blood pressure yourself • Control stress • Exercise • Reduce salt in diet	Local health department for free screening • Your doctor • The medical department where you work • Available equipment for use at home
MOTOR VEHICLE ACCIDENTS	Always wear seatbelts • Drive defensively • Don't drive after drinking • Don't speed	State and local traffic safety courses • Courses in defensive driving
POLLUTION	Find ways to minimize the effects pollution has on you • Work with local government and community action groups to monitor and limit pollution • Relocate	State and local air and water quality control boards • Public interest groups • Local government representative
WORK HAZARDS	Know your hazardous exposures at work, especially to toxic substances • Control the impact of these hazards on your health	Occupational safety and health division of your state health department • Your rights and responsibilities as an employee or employer
DEPRESSION	Seek treatment • Expand social support network • Extend your range of interests and activities • Exercise	Local Mental Health Association • Community mental health center • Explore local social organizations (church, sport, hobby, or work groups)

I HAVE SEEN HOW MY BEHAVIOR AFFECTS MY HEALTH AND I UNDERSTAND HOW WHAT I DO CHANGES MY RISKS.

IN ORDER TO BE HEALTHIER, LIVE LONGER AND FEEL BETTER I HEREBY AGREE TO:

Work toward improvement in the areas in which I have an increased risk:

	CHECK
My Type A personality	☐
My blood pressure	☐
My cholesterol	☐
My weight	☐

Continue to do well in these areas: ☐

My general well-being	☐
My exercise	☐
My not smoking	☐
My cancer risks	☐
My alcohol consumption	☐
My seatbelt usage	☐

DATE _____ NAME _____

MEETING YOUR HEALTH OBJECTIVES

Now that you have worked through your Health Report, you may have some new ideas about the way you want to manage your health. Perhaps you have made some promises to yourself in your Contract for Better Health.

No matter how you go about it, you're doing things about your health all the time, but to get your health where you want it—and keep it there—the things you do have to be the best options for you. Exercising those options may depend on information that is hard to come by.

You may find that it is difficult to get clear, up-to-date, reliable information that is directly relevant to *your* health circumstances and needs. The Health Corporation can help you get just that kind of information.

The Health Corporation is preparing personalized programs and materials to help participants in the Health Self-Appraisal program meet their health objectives. For instance, one such personalized program may be a monthly Computer-Generated Personal Health Advisory that can bring you new facts and action plans specifically tailored to your own health needs and interests, based on the detailed profile you created for yourself with your Health Self-Appraisal.

You can instruct The Health Corporation to get in touch with you when there are new materials or programs available that, based on your own Health Self-Appraisal results, could be helpful to you in doing whatever it is you have decided to do about meeting your health objectives. For example, if you had an increased risk of a heart attack you would be notified of programs and materials, as they become available, which might help you reduce this risk.

YOUR REQUEST FOR NEW INFORMATION. To give the Health Corporation permission to use your data to provide this service, you need to *initial the box on the facing page.* You will receive, free of charge and with no obligation, announcements of those personalized programs and materials which may be directly relevant to your specific health needs and interests. In order to protect the confidentiality of your data, The Health Corporation requires your permission for any other use which identifies your data with your name.

YOUR EVALUATION OF THIS REPORT. The Health Corporation's Health Self-Management Program is a continuously evolving service. Your participation in the Health Self-Appraisal part of the program has already been of major importance to its development. Now, *your opinion* of the Health Self-Appraisal is equally important. While your impressions of your Health Report are still fresh in your mind, *please take a few minutes to fill out and mail the evaluation questions on the facing page.*

The Health Corporation,

David A. Dushkin
Chairman of the Board

James E. Bernstein, M.D.
President

I think the money and time I spent to get my Report was:

☐ Very well spent ☐ Well spent
☐ Not very well spent ☐ Wasted

Comment: _____

On the whole I think my Health Report contained:

☐ Mostly good news ☐ Mostly bad news
☐ A mixture of good and bad news

Comment: _____

Considering the time and money you invested in your Health questionnaire and Report, were your expectations:

☐ Much exceeded ☐ Exceeded
☐ Met ☐ Disappointed ☐ Very disappointed

Comment: _____

It seems to me that the description of my current health status and prospects presented in my Report is:

☐ Very accurate ☐ Mostly accurate ☐ Not accurate

Comment: _____

EVALUATION

PAGES	SECTIONS	This was meaningful to me. I learned new and useful information in this section.	I learned about what I expected to in this section.	I didn't learn anything new or useful in this section.	I plan to act on what I learned in this section. YES	NO	I want help developing what I learned. YES	NO
8-9	GENERAL WELL-BEING	☐	☐	☐	☐	☐	☐	☐
10-11	STRESS	☐	☐	☐	☐	☐	☐	☐
12-13	SOCIAL SUPPORTS	☐	☐	☐	☐	☐	☐	☐
14-15	COPING	☐	☐	☐	☐	☐	☐	☐
16-17	HEART DISEASE / STROKE	☐	☐	☐	☐	☐	☐	☐
18-19	BLOOD PRESSURE	☐	☐	☐	☐	☐	☐	☐
20-21	EXERCISE	☐	☐	☐	☐	☐	☐	☐
22-23	CHOLESTEROL	☐	☐	☐	☐	☐	☐	☐
24-25	WEIGHT	☐	☐	☐	☐	☐	☐	☐
26-27	TYPE A	☐	☐	☐	☐	☐	☐	☐
28-29	SMOKING	☐	☐	☐	☐	☐	☐	☐
30-31	RISK OF CANCER	☐	☐	☐	☐	☐	☐	☐
32-33	ALCOHOL	☐	☐	☐	☐	☐	☐	☐
34-35	ACCIDENTS	☐	☐	☐	☐	☐	☐	☐
36-37	HEALTH AGE	☐	☐	☐	☐	☐	☐	☐
38-39	LIFE EXPECTANCY	☐	☐	☐	☐	☐	☐	☐
40-41	HEALTH ATTITUDES	☐	☐	☐	☐	☐	☐	☐
42-43	BEHAVIOR CHANGE	☐	☐	☐	☐	☐	☐	☐

COMMENTS: _____

I sent you my first self-appraisal DEC 30, 1979

Please send me another Questionnaire in a year so that I can re-evaluate my health behaviors and beliefs then. I understand next year's Report would compare my results then with my current results. I have no obligation to continue my program. I'll decide whether to fill out the new Questionnaire when I get it.

NOTE: Unless you notify The Health Corporation by checking this box ☐ that you *don't* want the follow-up Questionnaire, it will be sent to you automatically.

CODE CCCCCCCC3

INITIALS

☐ I would like The Health Corporation to keep me advised about programs and materials that could be helpful to me, based on my Health Self-Appraisal results.

The Health Corporation computer will scan my Health Self-Appraisal file to determine what materials would be most useful to me. I understand that this selection process will occur within the Health Corporation computer, completely preserving the confidentiality of my records.

My request for information about new materials does not imply any commitment on my part. I will make up my mind about ordering Health Corporation materials when I'm notified of their availability.

TEAR OUT AND MAIL TO THE HEALTH CORPORATION

CCCCCCCC

As a result of the Health Appraisal do you plan to make changes in your health related behavior?

- ☐ No
- ☐ Some
- ☐ A few
- ☐ Many

Will you follow through on your contract with yourself to reduce your risks?

- ☐ Yes
- ☐ No

From where are you planning to obtain information and skills to support you in maintaining and improving your health? (Check all that apply)

- ☐ Your doctor
- ☐ Other health professionals
- ☐ Library or bookstore
- ☐ Radio, Television, Newspapers
- ☐ Other

Please specify/ _____

_____

_____

_____

_____

_____

_____

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HEALTH SELF-APPRAISAL QUESTIONNAIRE

Filling out this Questionnaire is going to be a thought-provoking, time-consuming task. The questions are easy to answer, but there are a lot of them. There have to be. The Questionnaire must be thorough to provide you with a comprehensive Health Report.

Take the time. Your health is worth it.

THE HEALTH CORPORATION

NAME (PLEASE PRINT OR TYPE)

ADDRESS

CITY STATE ZIP

DATE MAILED

Dec 5

1 Please make sure that you provide the important name and address information (at left) so that your Health Report can be sent to you.

GENERAL INSTRUCTIONS FOR COMPLETING YOUR HEALTH SELF-APPRAISAL QUESTIONNAIRE AND OBTAINING YOUR HEALTH REPORT

1) *Fill out the Questionnaire.* Work through the questions contained in this booklet, making a check or marking a number in the appropriate answer box for each question.

- Select and mark *clearly* the one best answer, for example:

> **0.00** *Compared to your friends,* how concerned or worried are you about your health?
>
> *Not at all concerned* [1] [2] [3] [4] [5] [6] [7] *Very concerned*

unless the question allows for more than one response:

> **0.00** What is your race or ethnic background? *(Select one, or, if you are of mixed origin, select two)*
>
> [1] Black/Afro-American
> [2] Oriental/Asian-American
> [3] American Indian/Native American
> [4] Spanish American
> [5] Jewish
> [6] White/Caucasian
> [7] Other

- Answer all questions unless the instructions indicate that you should skip one.
- In cases where you don't know the answer to a question, or where the options given do not allow for your answer, then select a response that closely resembles your situation.
- There are no *right* answers. This is not a test.
- *You* are the person to whom the answers really matter. If you give inaccurate responses or don't answer some of the questions, you will diminish the usefulness of the Appraisal for *you.*

2) *Send in your completed Questionnaire to get your Health Report.* You will find instructions for obtaining your Report at the end of this Questionnaire.

The Health Corporation will maintain the confidentiality of your answers. The Health Corporation will not permit any personally identifiable information from your Health Report to be obtained by any person or organization at any time for any reason whatsoever without first obtaining your written permission.

DAVID A. DUSHKIN
Chairman of the Board

2 PERSONAL INFORMATION:

This first section of your Health Self-Appraisal Questionnaire contains questions regarding you, your family, and your environment.

2.00 How old were you on your last birthday?

__ __ years

2.01 Are you:

[1] Male [2] Female

2.02 How many people are living in your home, *including you?*

__ __ people

2.03 With whom do you live? (Check as many as apply)

[1] Spouse or family
[2] Friends
[3] Alone
[4] Relatives
[5] Other

2.04 At the present time, are you:

[1] Married [2] Divorced
[3] Widowed [4] Separated

or have you:

[5] Never been married
[If never married, go to 2.08]

2.05 Have you been married more than once?

[1] Yes [2] No

2.06 How many different spouses have you had?

[1] 1 [2] 2 [3] 3 [4] 4 [5] more than 4

2.07 How old were you when you were first married?

[1] under 20 [2] 20-29 [3] 30 or over

2.08 Which is the highest grade of school you have completed?

[1] First [2] Second [3] Third
[4] Fourth [5] Fifth [6] Sixth
[7] Seventh [8] Eighth [9] Ninth
[10] Tenth [11] Eleventh [12] Twelfth
[13] Never attended school

2.09 Did you graduate from high school or pass a high school equivalency test?

[1] Yes [2] No

2.10 How many years of college or university study have you completed?

[1] 0 [2] 1 [3] 2 [4] 3 [5] 4
[6] 5 or more

2.11 Do you have a college degree or degrees? [1] Yes [2] No

2.12 In what year did you complete your highest grade of school or year of college?

19 __ __

2.13 Taking into consideration all sources of income, what was your total gross income last year for you and your immediate family?

[1] less than $4,999
[2] $5,000 to $9,999
[3] $10,000 to $19,999
[4] $20,000 to $35,000
[5] more than $35,000

2.14 What is your employment status? (Check only one)

[1] Employed
[2] Homemaker
[3] Temporarily out of work
[4] Retired
[5] Not employed (e.g., student)
[6] Unemployed for more than one year.

2.15 What is your religious preference?

[1] Protestant [2] Roman Catholic
[3] Jewish [4] Other
[5] Mormon (Latter Day Saints)
[6] Seventh Day Adventist
[7] None, no preference

2.16 What is your race or ethnic background? *(Select one, or, if you are of mixed origin, select two)*

[1] Black/Afro-American
[2] Oriental/Asian-American
[3] American Indian/Native American
[4] Spanish American
[5] Jewish
[6] White/Caucasian
[7] Other

2.17 Where are you living?

[1] In a city (over 100,000)
[2] In a city (under 100,000)
[3] In a suburb
[4] In the country

2.18 What is your weight?

__ __ __ pounds

2.19 What is your height? (without shoes)

__ feet __ __ inches

2.20 Do you have a small, medium or large body frame?

[1] Small (Thin chest, narrow shoulders and hips)
[2] Medium
[3] Large (Thick chest, broad shoulders and hips)

2.21 What is your waistline? (measured at your beltline, standing comfortably)

__ __ inches

3 YOUR ATTITUDES TOWARD YOUR HEALTH: Below you will find some questions on what you think and do about your health.

Note that the words at each end of the scale describe opposites. Check the box which seems closest to what you think.

3.00 Some people are quite concerned about their health while others are not. How concerned are you about your own health?

Not at all concerned [1] [2] [3] [4] [5] [6] [7] *Very concerned*

3.01 *Compared to your friends,* how concerned or worried are you about your health?

Not at all concerned [1] [2] [3] [4] [5] [6] [7] *Very concerned*

3.02 We all have many things to worry about, and health is just one of them. *Compared to other cares you have,* how concerned are you about your health?

Not at all concerned [1] [2] [3] [4] [5] [6] [7] *Very concerned*

3.03 Some people are quite concerned about the chance of *getting sick,* while others are not as worried. First, how concerned are *you* about the chance of getting sick?

Not at all concerned [1] [2] [3] [4] [5] [6] [7] *Very concerned*

3.04 *Compared to your friends,* how concerned are you about the possibility of getting sick?

Not at all concerned [1] [2] [3] [4] [5] [6] [7] *Very concerned*

3.05 Here is a list of health problems. *How concerned* are you about getting each one?

	Not at all concerned	*Very concerned*	
Heart trouble	[1] [2] [3] [4] [5] [6] [7]		a
Cancer	[1] [2] [3] [4] [5] [6] [7]		b
Stroke	[1] [2] [3] [4] [5] [6] [7]		c
Diabetes	[1] [2] [3] [4] [5] [6] [7]		d
Mental illness	[1] [2] [3] [4] [5] [6] [7]		e
A serious accident *(such as a broken leg)*	[1] [2] [3] [4] [5] [6] [7]		f
High blood pressure	[1] [2] [3] [4] [5] [6] [7]		g
Influenza	[1] [2] [3] [4] [5] [6] [7]		h

3.06 How often have you visited a doctor in the past 5 years for a general health check-up even though you felt all right?

[1] never
[2] once or twice
[3] 3-5 times
[4] 6-10 times
[5] more than 10 times

HEART TROUBLE

3.07 Has your doctor told you that you have heart trouble?

[1] Yes [2] No [If no, go to 3.10]

3.08 Has your doctor given you any instructions about treating or caring for your heart trouble?

[1] Yes [2] No [If no, go to 3.10]

3.09 How closely are you following the doctor's advice for your heart trouble?

Not at all [1] [2] [3] [4] [5] [6] [7] *Following it completely*

3.10 If you do nothing to prevent it, how likely – in the next three years – are you to get heart trouble?

Not at all [1] [2] [3] [4] [5] [6] [7] *Extremely likely*

CANCER

3.11 Has your doctor told you that you have cancer?

[1] Yes [2] No [If no, go to 3.14]

3.12 Has your doctor given you any instructions about treating or caring for your cancer?

[1] Yes [2] No [If no, go to 3.14]

3.13 How closely are you following the doctor's advice for your cancer?

Not at all [1] [2] [3] [4] [5] [6] [7] *Following it completely*

3.14 If you do nothing to prevent it, how likely – in the next three years – are you to get cancer?

Not at all [1] [2] [3] [4] [5] [6] [7] *Extremely likely*

STROKE

3.15 Has your doctor told you that you could suffer from a stroke?

[1] Yes [2] No [If no, go to 3.18]

3.16 Has your doctor given you any instructions about treating or caring for a possible stroke?

[1] Yes [2] No [If no, go to 3.18]

3.17 How closely are you following the doctor's advice regarding the possibility of a stroke?

Not at all [1] [2] [3] [4] [5] [6] [7] *Following it completely*

3.18 If you do nothing to prevent it, how likely – in the next three years – are you to suffer a stroke?

Not at all [1] [2] [3] [4] [5] [6] [7] *Extremely likely*

DIABETES

3.19 Has your doctor told you that you have diabetes?

[1] Yes [2] No [If no, go to 3.22]

3.20 Has your doctor given you any instructions about treating or caring for your diabetes?

[1] Yes [2] No [If no, go to 3.22]

3.21 How closely are you following the doctor's advice for your diabetes?

Not at all [1] [2] [3] [4] [5] [6] [7] *Following it completely*

3.22 If you do nothing to prevent it, how likely – in the next three years – are you to get diabetes?

Not at all [1] [2] [3] [4] [5] [6] [7] *Extremely likely*

MENTAL ILLNESS

3.23 Has your doctor told you that you have a mental illness?

[1] Yes [2] No [If no, go to 3.26]

3.24 Has your doctor given you any instructions about treating or caring for your mental illness?

[1] Yes [2] No [If no, go to 3.26]

3.25 How closely are you following the doctor's advice regarding your mental illness?

Not at all [1] [2] [3] [4] [5] [6] [7] *Following it completely*

3.26 If you do nothing to prevent it, how likely – in the next three years – are you to become mentally ill?

Not at all [1] [2] [3] [4] [5] [6] [7] *Extremely likely*

HIGH BLOOD PRESSURE

3.27 Has your doctor told you that you have high blood pressure?

[1] Yes [2] No [If no, go to 3.30]

3.28 Has your doctor given you any instructions about treating or caring for your high blood pressure?

[1] Yes [2] No [If no, go to 3.30]

3.29 How closely are you following the doctor's advice for your high blood pressure?

Not at all [1] [2] [3] [4] [5] [6] [7] *Following it completely*

3.30 If you do nothing to prevent it, how likely – in the next three years – are you to get high blood pressure?

Not at all [1] [2] [3] [4] [5] [6] [7] *Extremely likely*

3.31 How serious, in terms of your health and normal activities, would it be if - in the next three years -- you were to get:

	Not at all serious						*Extremely serious*	
Heart Trouble	1	2	3	4	5	6	7	a
Cancer	1	2	3	4	5	6	7	b
Stroke	1	2	3	4	5	6	7	c
Diabetes	1	2	3	4	5	6	7	d
Mental Illness	1	2	3	4	5	6	7	e
High Blood Pressure	1	2	3	4	5	6	7	f

3.32 How much can a person do to keep from getting each of the following health problems?

	Nothing						*A great deal*	
Heart Trouble	1	2	3	4	5	6	7	a
Cancer	1	2	3	4	5	6	7	b
Stroke	1	2	3	4	5	6	7	c
Diabetes	1	2	3	4	5	6	7	d
Mental Illness	1	2	3	4	5	6	7	e
High Blood Pressure	1	2	3	4	5	6	7	f
A Serious Accident	1	2	3	4	5	6	7	g

3.33 How much can a doctor do to help you *keep from getting* each of these health problems?

	Nothing						*A great deal*	
Heart Trouble	1	2	3	4	5	6	7	a
Cancer	1	2	3	4	5	6	7	b
Stroke	1	2	3	4	5	6	7	c
Diabetes	1	2	3	4	5	6	7	d
Mental Illness	1	2	3	4	5	6	7	e
High Blood Pressure	1	2	3	4	5	6	7	f
A Serious Accident	1	2	3	4	5	6	7	g

3.34 Compared to other people you know, how would you rate your own health?

Very poor 1 2 3 4 5 6 7 *Excellent*

3.35 In general, thinking about the things that doctors have told you to do when you've been sick, how much would you say those things helped to make you well again?

Not at all 1 2 3 4 5 6 7 *A great deal*

3.36 All things considered, how much *better* do you feel you could take care of your health than you do right now?

No better care than now 1 2 3 4 5 6 7 *A great deal better care than now*

3.37 Thinking about all the illnesses you have had during an average year, would you say that you usually take care of them yourself, or do you usually take them to a doctor?

Take care of all myself 1 2 3 4 5 6 7 *Take all of them to a doctor*

3.38 In general, when you think of the medical care that you (and your family) now receive, how satisfied are you with:

	Not at all satisfied						*Very satisfied*	
Quality of care	1	2	3	4	5	6	7	a
Cost of care	1	2	3	4	5	6	7	b
Convenience of care	1	2	3	4	5	6	7	c
Relationships with doctors	1	2	3	4	5	6	7	d
Place you get care	1	2	3	4	5	6	7	e

3.39 Many people think that there are things they can do to help prevent health problems. How much do you believe each of the following actions can prevent serious health problems?

	Would do little or nothing to prevent						*Would do a great deal to prevent*	
a) Eating special foods	1	2	3	4	5	6	7	a
b) Getting enough physical activity	1	2	3	4	5	6	7	b
c) Not being overweight or underweight	1	2	3	4	5	6	7	c
d) Avoiding tension and anxiety	1	2	3	4	5	6	7	d
e) Getting regular medical checkups	1	2	3	4	5	6	7	e
f) Taking medicines your doctor prescribes	1	2	3	4	5	6	7	f
g) Not smoking cigarettes	1	2	3	4	5	6	7	g
h) Not drinking too much	1	2	3	4	5	6	7	h
i) Taking vitamins or tonics	1	2	3	4	5	6	7	i
j) Getting enough rest and sleep	1	2	3	4	5	6	7	j

3.40 How worried are you about:

	Not worried at all						*Very worried*	
a) The amount of rest and sleep you get	1	2	3	4	5	6	7	a
b) How often you become worried or tense	1	2	3	4	5	6	7	b
c) The amount of fatty foods you eat	1	2	3	4	5	6	7	c
d) How often you eat too much	1	2	3	4	5	6	7	d
e) The amount of physical exercise you get	1	2	3	4	5	6	7	e
f) How often you use non-prescription drugs	1	2	3	4	5	6	7	f
g) The amount of coffee or tea you drink	1	2	3	4	5	6	7	g
h) How often you eat "junk" foods	1	2	3	4	5	6	7	h
i) Feeling depressed	1	2	3	4	5	6	7	i
j) The number of cigarettes you smoke	1	2	3	4	5	6	7	j
k) The amount of beer or liquor you drink	1	2	3	4	5	6	7	k

3.41 How often would you say you do each of the following things?

	Never or rarely						*Very often*	
a) Get enough rest and sleep	1	2	3	4	5	6	7	a
b) Eat a healthful diet	1	2	3	4	5	6	7	b
c) Drink coffee or tea	1	2	3	4	5	6	7	c
d) Take vitamins	1	2	3	4	5	6	7	d
e) Eat special foods to try to keep well	1	2	3	4	5	6	7	e
f) Eat too much	1	2	3	4	5	6	7	f
g) Engage in active sports or physical exercise	1	2	3	4	5	6	7	g
h) Eat fatty foods	1	2	3	4	5	6	7	h
i) Get worried or tense	1	2	3	4	5	6	7	i
j) Use non-prescription drugs	1	2	3	4	5	6	7	j
k) Feel depressed	1	2	3	4	5	6	7	k
l) Smoke cigarettes	1	2	3	4	5	6	7	l
m) Drink wine, beer or liquor	1	2	3	4	5	6	7	m

3.42 If your doctor advised you to do each of the following things, how difficult would it be for you to do them?

	Not difficult at all						*Extremely difficult*	
a) Eat special foods	1	2	3	4	5	6	7	a
b) Get enough physical activity	1	2	3	4	5	6	7	b
c) Not be overweight or underweight	1	2	3	4	5	6	7	c
d) Avoid tension and anxiety	1	2	3	4	5	6	7	d
e) Get regular medical checkups	1	2	3	4	5	6	7	e
f) Take medicines your doctor prescribes	1	2	3	4	5	6	7	f
g) Not smoke cigarettes	1	2	3	4	5	6	7	g
h) Not drink too much	1	2	3	4	5	6	7	h
i) Take vitamins or tonics	1	2	3	4	5	6	7	i
j) Get enough rest and sleep	1	2	3	4	5	6	7	j

3.43 In general, when you are sick, how much does it keep you from doing the things you need to do?

Not at all [1] [2] [3] [4] [5] [6] [7] *A great deal*

3.44 Overall, how well do you feel you take care of your own health right now?

Not at all well [1] [2] [3] [4] [5] [6] [7] *Very well*

Now, here are some statements about how things happen. Please indicate how much you agree or disagree with each of these statements:	*Strongly agree*			*Neither agree nor disagree*			*Strongly disagree*	
3.45 Events usually take their own course no matter what you do	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.45
3.46 In most situations a person can control what happens	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.46
3.47 When I plan ahead, I usually get to do things the way I expected	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.47
3.48 Whenever I hear about some disease I think that I might get it	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.48
3.49 A real problem when I am ill is that it prevents me from doing things I want to do	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.49
3.50 When it comes to my health I trust my own feelings more than a doctor's opinion	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.50
3.51 When I follow my doctor's advice I usually feel better	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.51
3.52 I depend a lot on my doctor for taking care of health problems	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.52
3.53 Doctors usually know what's best for their patients	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.53
3.54 I can do a lot to keep illness from happening	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.54
3.55 Many times I feel we might just as well make decisions by flipping a coin	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.55
3.56 Good health is mostly a matter of luck, rather than what a person does about health	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.56
3.57 What happens to me is more a result of what I do than a matter of chance or luck	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.57
3.58 If you wait long enough, you will get over most illnesses	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.58
3.59 In general, most illnesses can be prevented	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.59
3.60 These days you just can't do much to keep healthy	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.60
3.61 People's ill health usually results from their own carelessness	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.61
3.62 With so many diseases around, you can never know how or when you might pick one up	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.62
3.63 If I take care of myself, I can avoid illness	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.63
3.64 Sometimes you can be sick without even knowing it	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.64
3.65 Most people aren't as interested in their health as they should be	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.65
3.66 Most often it is not possible to prevent sickness – if you are going to be sick, you will be	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.66
3.67 If I got sick, it would be very bad for my family	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.67
3.68 You have to use your own judgment in deciding how much of a doctor's advice to follow	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.68
3.69 I can do a lot to control the state of my health	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.69
3.70 In general, I follow my doctor's advice very closely	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.70
3.71 My body seems to resist illness very well	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.71
3.72 I expect to have a healthy life	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.72
3.73 I think my health will be better in the future than it is now	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.73
3.74 When I'm sick I try to just keep going as usual	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.74

Now, here are some reasons people give for NOT seeing a doctor. Please indicate how you feel about each one:	*Strongly agree*			*Neither agree nor disagree*			*Strongly disagree*	
3.75 I don't like to bother the doctor with small complaints	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.75
3.76 Regular exams just make me worry – it's like looking for trouble	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.76
3.77 I don't want to spend the money if I'm feeling all right	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.77
3.78 The doctor might tell me I need some expensive medicine or treatment	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.78
3.79 The doctor might want me to change my ways, like rest more and eat less	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.79
3.80 You don't learn much about your health from regular check-ups	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.80
3.81 If you feel all right, the chances are you are all right	[1]	[2]	[3]	[4]	[5]	[6]	[7]	3.81

Here is a list of different people we sometimes depend on for help with our health problems:

3.82 How much would you say you depend on each kind of person to help you with your health problems?

	Not at all			*Somewhat*			*A great deal*	*Doesn't apply*	
a) Your spouse/partner	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	a
b) Your children	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	b
c) Parents	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	c
d) Other relatives	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	d
e) Friends (neighbors)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	e
f) Friends at work	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	f

3.83 How easy or hard does each kind of person make it for you to do things you should do for your health?

	Much harder			*Neither easier nor harder*			*Much easier*	*Doesn't apply*	
a) Your spouse/partner	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	a
b) Your children	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	b
c) Parents	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	c
d) Other relatives	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	d
e) Friends (neighbors)	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	e
f) Friends at work	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	f

4 YOUR EMOTIONAL WELL-BEING: Section Four of the Questionnaire asks about things that may affect your emotional well-being and mental health. Remember there are no "right" answers.

4.00 How have you been feeling in general (during the past month)?

1. In excellent spirits
2. In very good spirits
3. In good spirits mostly
4. I have been up and down in spirits a lot
5. In low spirits mostly
6. In very low spirits

4.01 Have you been bothered by nervousness or your nerves lately? (during the past month)

1. Extremely so, to the point where I could not work or take care of things.
2. Very much so
3. Quite a bit
4. Some, enough to bother me
5. A little
6. Not at all

4.02 Have you been in firm control of your behavior, thoughts, emotions or feelings (during the past month)?

1. Yes, definitely so
2. Yes, for the most part
3. Generally so
4. Not too well
5. No, and I am somewhat disturbed
6. No, and I am very disturbed

4.03 Have you felt so sad, discouraged and hopeless, or had so many problems that you wondered if everything was worthwhile? (during the past month)

1. Extremely so, to the point that I have just about given up.
2. Very much so
3. Quite a bit
4. Some . . . enough to bother me
5. A little bit
6. Not at all

4.04 Have you been under or felt you were under any strain, stress or pressure? (during the past month)

1. Yes, almost more than I could bear or stand
2. Yes, quite a bit of pressure
3. Yes, some – more than usual
4. Yes, some – but about as usual
5. Yes, a little
6. Not at all

4.05 How happy, satisfied or pleased have you been with your personal life? (during the past month)

1. Extremely happy – could not have been more satisfied or pleased.
2. Very happy
3. Fairly happy
4. Satisfied – pleased
5. Somewhat dissatisfied
6. Very dissatisfied

4.06 Have you had any reason to wonder if you were losing your mind, or losing control over the way you talk, think, feel or of your memory? (during the past month)

1. Not at all
2. Only a little
3. Some, but not enough to be concerned or worried about
4. Some, I have been a little concerned
5. Some and I am quite concerned
6. Yes, and I am very much concerned

4.07 Have you been anxious, worried or upset? (during the past month)

1. Extremely so, to the point of being sick or almost so
2. Very much so
3. Quite a bit
4. Some, enough to bother me
5. A little bit
6. Not at all

4.08 Have you been waking up fresh and rested (during the past month)?

1. Every day
2. Most every day
3. Fairly often
4. Less than half the time
5. Rarely
6. None of the time

During the past month . . .	*All of the time*	*Most of the time*	*A good bit of the time*	*Some of the time*	*A little of the time*	*None of the time*	
4.09 Have you been bothered by any illness, bodily disorder, pains, or fears about your health?	1	2	3	4	5	6	**4.09**
4.10 Has your daily life been full of things that were interesting to you?	1	2	3	4	5	6	**4.10**
4.11 Have you felt downhearted and blue?	1	2	3	4	5	6	**4.11**
4.12 Have you been feeling emotionally stable and sure of yourself?	1	2	3	4	5	6	**4.12**
4.13 Have you felt tired, used-up or exhausted?	1	2	3	4	5	6	**4.13**

For each of the four questions below, note that the words at each end of the scale describe opposite feelings. Check the number which seems closest to how you have generally felt DURING THE PAST MONTH.

4.14 How concerned or worried have you been about your *health*?

Not concerned at all — *Very concerned*

1 2 3 4 5 6 7 8 9 10 11

4.15 How *relaxed* or *tense* have you been?

Very relaxed — *Very tense*

1 2 3 4 5 6 7 8 9 10 11

4.16 How much *energy, pep, vitality* have you felt?

No energy at all, listless — *Very energetic, dynamic*

1 2 3 4 5 6 7 8 9 10 11

4.17 How *depressed* or *cheerful* have you been?

Very depressed — *Very cheerful*

1 2 3 4 5 6 7 8 9 10 11

4.18 Have you ever felt that you were going to have or were close to having a nervous breakdown?

1. Yes, I feel that I am close to one now
2. Yes . . . during the past year
3. Yes . . . more than a year ago
4. No

4.19 Have you ever had a nervous breakdown?

1. Yes . . . during the past year
2. Yes . . . more than a year ago
3. No

4.20 Have you ever felt so hopeless that you thought seriously of killing yourself?

1. Yes, I have thought of it in the last month
2. Yes, within the last year
3. Yes, more than a year ago
4. No

4.21 Have you ever attempted suicide?

1. Yes, within the last month
2. Yes, within the last year
3. Yes, more than a year ago
4. No, never

4.22 Has anyone in your family committed suicide?

1 Yes 2 No

4.23 Do you think you need help at this time with a serious personal problem?

1. Yes
2. I don't know
3. No

4.24 Are you presently receiving help with a serious personal problem?

1. No
2. Yes, and it is adequate
3. Yes, but it is *not* adequate

4.25 Who is giving you help with your problem now?

[1] Physician, family doctor
[2] Priest, minister, rabbi
[3] Astrologer [7] Social worker
[4] Lawyer, judge [8] Marriage counselor
[5] Psychiatrist [9] Nurse
[6] Psychologist [10] Other

4.26 I feel weak all over much of the time.

[1] Yes [2] No

4.27 I have had periods of days, weeks, or months when I couldn't take care of things because I just couldn't "get going."

[1] Yes [2] No

4.28 In general, would you say that most of the time you are in high (very good) spirits, good spirits, low spirits or very low spirits?

[1] High [2] Good
[3] Low [4] Very low

4.29 Every so often I suddenly feel hot all over.

[1] Yes [2] No

4.30 Have you ever been bothered by your heart beating hard? Would you say:

[1] Often [2] Sometimes [3] Never

4.31 Would you say that your appetite is poor, fair, good, or too good?

[1] Poor [2] Fair
[3] Good [4] Too good

4.32 I have periods of such great restlessness that I cannot sit still very long.

[1] Yes [2] No

4.33 Are you the worrying type?

[1] Yes [2] No

4.34 Have you ever been bothered by shortness of breath when you were *not* exercising or working hard? Would you say:

[1] Often [2] Sometimes [3] Never

4.35 Are you ever bothered by nervousness (irritable, fidgety, tense)? Would you say:

[1] Often [2] Sometimes [3] Never

4.36 Have you ever had any fainting spells (lost consciousness)? Would you say.

[1] Never
[2] A few times
[3] More than a few times

4.37 Do you ever have any trouble in getting to sleep or staying asleep? Would you say:

[1] Often [2] Sometimes [3] Never

4.38 I am bothered by acid (sour) stomach several times a week.

[1] Yes [2] No

4.39 My memory seems to be all right (good).

[1] Yes [2] No

4.40 Have you ever been bothered by "cold sweats"? Would you say

[1] Often [2] Sometimes [3] Never

4.41 Do your hands ever tremble enough to bother you? Would you say:

[1] Often [2] Sometimes [3] Never

4.42 There seems to be a fullness (clogging) in my head or nose much of the time.

[1] Yes [2] No

4.43 I have personal worries that get me down physically (make me physically ill).

[1] Yes [2] No

4.44 Do you feel somewhat apart even among friends (apart, isolated, alone)?

[1] Yes [2] No

4.45 Nothing ever turns out for me the way I want it to.

[1] True [2] False

4.46 Are you troubled with headaches or pains in the head? Would you say:

[1] Often [2] Sometimes [3] Never

4.47 I sometimes can't help wondering if anything is worthwhile anymore.

[1] Yes [2] No

5 Next is a list of things which may happen to any of us at some time in our lives. Please indicate which *have happened* to you within the last year. Indicate whether or not the event occured. If yes, indicate whether the event was *desirable* (did you want it to happen: was it pleasant?) or *undesirable* (was it saddening, upsetting, tragic?):

	Event did not Occur	*Event Occured*	*Event was Desirable*	*Event was Undesirable*	
There was a change in the health of a family member	[1]	[2] →	[3]	[4]	5.00
You gained a family member	[1]	[2] →	[3]	[4]	5.01
You retired	[1]	[2] →	[3]	[4]	5.02
You experienced a change in your financial status	[1]	[2] →	[3]	[4]	5.03
You experienced injury or illness	[1]	[2] →	[3]	[4]	5.04
There was a change in the number of arguments you have with the person you are closest to	[1]	[2] →	[3]	[4]	5.05
There was a change in your responsibilities at work	[1]	[2] →	[3]	[4]	5.06
A close friend died	[1]	[2] →	[3]	[4]	5.07
A close family member died	[1]	[2] →	[3]	[4]	5.08
You were jailed	[1]	[2] →	[3]	[4]	5.09
You changed to a different line of work	[1]	[2] →	[3]	[4]	5.10
You got a mortgage of more than $20,000	[1]	[2] →	[3]	[4]	5.11
You were fired from your job	[1]	[2] →	[3]	[4]	5.12
You experienced sex difficulties	[1]	[2] →	[3]	[4]	5.13
You married	[1]	[2] →	[3]	[4]	5.14
Your spouse died	[1]	[2] →	[3]	[4]	5.15
You and your spouse divorced	[1]	[2] →	[3]	[4]	5.16
You and your spouse separated	[1]	[2] →	[3]	[4]	5.17
You experienced a marital reconciliation (Got back together with your spouse)	[1]	[2] →	[3]	[4]	5.18
You or your spouse became pregnant	[1]	[2] →	[3]	[4]	5.19
Your son or daughter left home	[1]	[2] →	[3]	[4]	5.20
There was a change in the number of family get-togethers	[1]	[2] →	[3]	[4]	5.21
You had a vacation	[1]	[2] →	[3]	[4]	5.22
You changed residence (moved)	[1]	[2] →	[3]	[4]	5.23
A family member lost job or earnings	[1]	[2] →	[3]	[4]	5.24
There was a change in your work hours	[1]	[2] →	[3]	[4]	5.25
There was a change in your work conditions	[1]	[2] →	[3]	[4]	5.26
You lost or received reduced social security payments	[1]	[2] →	[3]	[4]	5.27
A member of the family was hospitalized	[1]	[2] →	[3]	[4]	5.28
You started or ended school	[1]	[2] →	[3]	[4]	5.29

5.30 How many close friends do you have? (people that you feel at ease with, can talk to about private matters and can call upon for help)

[1] None [2] 1-2 [3] 3-5
[4] 6-9 [5] 10 or more

5.31 How many relatives do you have that you feel close to?

[1] None [2] 1-2 [3] 3-5
[4] 6-9 [5] 10 or more

5.32 How many of these friends or relatives do you see at least once a month?

[1] None [2] 1-2 [3] 3-5
[4] 6-9 [5] 10 or more

People have different ways of dealing with stress. How frequently do you use each of the following ways to help you manage and cope with stressful or changing situations?

	Always	*Frequently*	*Sometimes*	*Rarely*	*Never*	
Force yourself to put it out of your mind	[1]	[2]	[3]	[4]	[5]	**5.33**
Become more careful and conscientious—like in checking and rechecking your work	[1]	[2]	[3]	[4]	[5]	**5.34**
Allow yourself to be more irritable	[1]	[2]	[3]	[4]	[5]	**5.35**
Treat or indulge yourself—like buying something you've wanted	[1]	[2]	[3]	[4]	[5]	**5.36**
Smoke more than usual	[1]	[2]	[3]	[4]	[5]	**5.37**
Talk it over with a clergyman or spiritual advisor	[1]	[2]	[3]	[4]	[5]	**5.38**
Let off steam by getting angry	[1]	[2]	[3]	[4]	[5]	**5.39**
Just suffer it through and endure the problem as best you can	[1]	[2]	[3]	[4]	[5]	**5.40**
Get away for a few days	[1]	[2]	[3]	[4]	[5]	**5.41**
Avoid thinking about the problem	[1]	[2]	[3]	[4]	[5]	**5.42**
Go to a doctor other than a psychiatrist	[1]	[2]	[3]	[4]	[5]	**5.43**
Drink more wine, beer or liquor than usual	[1]	[2]	[3]	[4]	[5]	**5.44**
Work harder—either at your job or around the house	[1]	[2]	[3]	[4]	[5]	**5.45**
Take long baths or showers	[1]	[2]	[3]	[4]	[5]	**5.46**
Pray for guidance	[1]	[2]	[3]	[4]	[5]	**5.47**
Avoid other people, get away by yourself	[1]	[2]	[3]	[4]	[5]	**5.48**
Do something active like hard physical exercise	[1]	[2]	[3]	[4]	[5]	**5.49**
Get in the car and drive	[1]	[2]	[3]	[4]	[5]	**5.50**
Seek the advice and support of friends	[1]	[2]	[3]	[4]	[5]	**5.51**
Take long walks	[1]	[2]	[3]	[4]	[5]	**5.52**
Think it through and try to change your viewpoint or way of looking at the problem	[1]	[2]	[3]	[4]	[5]	**5.53**
Go to church	[1]	[2]	[3]	[4]	[5]	**5.54**
Sleep more than usual	[1]	[2]	[3]	[4]	[5]	**5.55**
Look for someone to blame	[1]	[2]	[3]	[4]	[5]	**5.56**
Act rowdy, call attention to yourself	[1]	[2]	[3]	[4]	[5]	**5.57**
Go to a psychiatrist, psychologist or social worker	[1]	[2]	[3]	[4]	[5]	**5.58**
Make love more than usual	[1]	[2]	[3]	[4]	[5]	**5.59**
Try to forget the whole thing by going to the movies, watching TV or reading a novel	[1]	[2]	[3]	[4]	[5]	**5.60**
Eat more than usual	[1]	[2]	[3]	[4]	[5]	**5.61**
Talk things over with your family	[1]	[2]	[3]	[4]	[5]	**5.62**
Take a pill or medicine such as a tranquilizer, sedative, sleeping pill, stimulant or anti-depressant	[1]	[2]	[3]	[4]	[5]	**5.63**

6

Please check how frequently each item is true for you.

	Almost Always	*Frequently*	*Sometimes*	*Infrequently*	*Almost Never*	
6.00 Is it important for you to be best in most things?	[1]	[2]	[3]	[4]	[5]	**6.00**
6.01 Does it irritate you when people do not take their jobs seriously?	[1]	[2]	[3]	[4]	[5]	**6.01**
6.02 Do you get annoyed when held up in traffic?	[1]	[2]	[3]	[4]	[5]	**6.02**
6.03 Do you get impatient when waiting in supermarket lines, bank lines, restaurant lines, etc.?	[1]	[2]	[3]	[4]	[5]	**6.03**
6.04 Does your spouse (or a close friend) ever do anything that makes your "blood boil"?	[1]	[2]	[3]	[4]	[5]	**6.04**
6.05 When you play games with people your own age, do you play hard to win?	[1]	[2]	[3]	[4]	[5]	**6.05**
6.06 In general, do you put more effort into getting a job done right than most people?	[1]	[2]	[3]	[4]	[5]	**6.06**
6.07 When you get angry, would people around you know about it?	[1]	[2]	[3]	[4]	[5]	**6.07**
6.08 Do you enjoy intense competition?	[1]	[2]	[3]	[4]	[5]	**6.08**
6.09 Do you try harder to accomplish things than most of your associates?	[1]	[2]	[3]	[4]	[5]	**6.09**
6.10 When playing games (cards, checkers, monoply, etc.) with children, would you let them win on purpose?	[1]	[2]	[3]	[4]	[5]	**6.10**
6.11 If you are kept waiting for an appointment, does it make you angry?	[1]	[2]	[3]	[4]	[5]	**6.11**
6.12 Would people who know you say that you were rather quiet?	[1]	[2]	[3]	[4]	[5]	**6.12**
6.13 Do you drive your car rather fast?	[1]	[2]	[3]	[4]	[5]	**6.13**
6.14 Are you more aggressive than most people in getting what you want?	[1]	[2]	[3]	[4]	[5]	**6.14**
6.15 Do you get angry inside when you see inefficency in your co-workers?	[1]	[2]	[3]	[4]	[5]	**6.15**

7 YOUR PAST AND PRESENT HEALTH: This section of the Health Appraisal Questionnaire contains questions specifically related to you and your family's physical health now and in the past.

7.00 In general, would you say your health is:
- [1] Excellent
- [2] Very good
- [3] Good
- [4] Fair
- [5] Poor

7.01 People's state of health sometimes affects the way they function and the way they carry out their life activities. How much is your daily life impaired by the state of your health today? (check the term which best describes you)
- [1] Not at all
- [2] Very slightly
- [3] Slightly
- [4] Moderately
- [5] Greatly
- [6] Very greatly
- [7] Extremely

7.02 Are you now unable to work because of some illness or injury?
[1] Yes [2] No

7.03 Do you have any chronic condition (medical condition which lasts for an extended time), *such as* asthma, arthritis, rheumatism?
[1] Yes [2] No

7.04 Do you have a permanent physical handicap or impairment *such as* trouble seeing or hearing (even with aids) or missing a limb?
[1] Yes [2] No

7.05 Have you had any of these physical ailments during the past 12 months? (check all which apply)

	Yes	No	
Swollen ankles	[1]	[2]	a
Pains in the back or spine	[1]	[2]	b
Repeated pains in the stomach	[1]	[2]	c
Frequent headaches	[1]	[2]	d
Pain in the heart	[1]	[2]	e
Constant coughing or frequent heavy chest colds	[1]	[2]	f
Paralysis of any kind	[1]	[2]	g
Stiffness, swelling or aching in any joint or muscle	[1]	[2]	h
Frequent cramps in the legs	[1]	[2]	i
Tightness or heaviness in the chest	[1]	[2]	j
Getting very tired in a short time	[1]	[2]	k

7.06 Do you smoke cigarettes?
[1] Yes [2] No
[If no, go to 7.13]

7.07 How many cigarettes do you smoke per day?
- [1] Less than 10
- [2] 10-19
- [3] 20-39
- [4] 40 or more

7.08 Do you inhale cigarette smoke?
- [1] Not at all
- [2] Just a little bit
- [3] Moderately
- [4] Deeply

7.09 During the last year, what kinds of cigarettes did you smoke *most* often?
- [1] Non-filter
- [2] Filter, high tar and nicotine
- [3] Filter, moderate tar and nicotine
- [4] Filter, low tar and nicotine

7.10 How old were you when you started smoking cigarettes?
- [1] Younger than 15
- [2] 15 to 19 years old
- [3] 20 to 24 years old
- [4] Older than 24

7.11 Have you ever tried to give up smoking cigarettes?
[1] Yes [2] No

7.12 Would you like to give up smoking cigarettes now?
[1] Yes [2] No
[If no, go to 7.17]

7.13 Did you ever smoke cigarettes?
[1] Yes [2] No
[If no, go to 7.17]

7.14 How many years ago did you stop smoking cigarettes?
- [1] Less than a year ago
- [2] 1-4 years ago
- [3] 5-9 years ago
- [4] More than 9 years ago

7.15 Before you stopped smoking, how many cigarettes did you usually smoke per day?
- [1] Less than 10
- [2] 10-19
- [3] 20-39
- [4] 40 or more

7.16 For how many years had you smoked cigarettes before you stopped?
- [1] Less than 1 year
- [2] 1-4 years
- [3] 5-10 years
- [4] 11-20 years
- [5] More than 20 years

7.17 Do you smoke a pipe?
[1] Yes [2] No
[If no, go to 7.20]

7.18 How many pipes do you smoke per day?
- [1] 1-2
- [2] 3-5
- [3] 6-10
- [4] more than 10

7.19 Do you inhale pipe smoke?
- [1] Always
- [2] Sometimes
- [3] Never

7.20 Do you smoke cigars?
[1] Yes [2] No
[If no, go to 7.23]

7.21 How many cigars do you smoke per day?
- [1] 1-2
- [2] 3-5
- [3] 6-10
- [4] more than 10

7.22 Do you inhale cigar smoke?
- [1] Always
- [2] Sometimes
- [3] Never

7.23 Do you have one or more firm, white patches on your lips or in your mouth, or has your doctor told you that you have leukoplakia?
[1] Yes [2] No

7.24 Looking back over the last month, on the average, how much alcohol did you drink per week? (For each kind of beverage write in the number of drinks per week or enter zero, if none.)

Glasses of wine	____ ____	a
Cans of beer	____ ____	b
Cocktails or highballs	____ ____	c
Shots of hard liquor	____ ____	d

7.25 Which best describes your drinking behavior? *(Check all that apply)*

	Yes	No	
I drink regularly, just about every day	[1]	[2]	a
I have a drink once in a while	[1]	[2]	b
I never or almost never drink	[1]	[2]	c
I occasionally go on a binge	[1]	[2]	d

7.26 Do you drive after drinking?
- [1] Never
- [2] Sometimes
- [3] Quite often

7.27 Have you ever been told to stop drinking because you had liver disease?
[1] Yes [2] No

7.28 Did your doctor ever tell you that you have cirrhosis of the liver (hardening of the liver)?
[1] Yes [2] No

We are trying to get at the total amount of energy you expend in one week. Looking back over the last several months, please estimate how much physical activity you have in a *typical* week. (Check all that apply, consider only the time you were actually physically active.)

ACTIVITY	**7.29** Number of times per week? 1	2	3-4	5-7	8-10	11-14	14+		**7.30** Number of minutes per session? 5	10	15	30	60	120	120+		**7.31** How vigorous? Mildly	Moderately	Very	
Walking/Strolling	1	2	3	4	5	6	7	a	1	2	3	4	5	6	7	a	1	2	3	a
Work in your house or garden	1	2	3	4	5	6	7	b	1	2	3	4	5	6	7	b	1	2	3	b
Calisthenics or Exercises	1	2	3	4	5	6	7	c	1	2	3	4	5	6	7	c	1	2	3	c
Swimming	1	2	3	4	5	6	7	d	1	2	3	4	5	6	7	d	1	2	3	d
Bicycling	1	2	3	4	5	6	7	e	1	2	3	4	5	6	7	e	1	2	3	e
Running/Jogging	1	2	3	4	5	6	7	f	1	2	3	4	5	6	7	f	1	2	3	f
Bowling	1	2	3	4	5	6	7	g	1	2	3	4	5	6	7	g	1	2	3	g
Tennis	1	2	3	4	5	6	7	h	1	2	3	4	5	6	7	h	1	2	3	h

7.32 How much physical activity is involved in your work and other exercise not listed above? Approximately how much would you have to *run vigorously per day* to equal the amount of energy you spend at work and at these other activities? (Check one)

1. less than 1 block
2. 1-2 blocks
3. 3-5 blocks
4. 6-12 blocks
5. 1-2 miles
6. 3-5 miles
7. more than 5 miles

7.33 How many miles per year do you travel in a car or other motor vehicle as either driver or passenger? (Check one)

1. less than 2,000
2. 2,000 – 5,000
3. 6,000 – 10,000
4. 11,000 – 20,000
5. 21,000 – 50,000
6. more than 50,000

7.34 How much of the time do you wear a seat belt when you are in a car or other motor vehicle? (Check one)

1. less than 10% of the time
2. 10% to 25%
3. 26% to 75%
4. more than 75% of the time

7.35 What kind of seat belt do you most often use? (Check one)

1. lap belt
2. lap-shoulder belt

7.36 At what speeds do you usually travel, as either driver or passenger? (Check one)

1. below speed limit
2. at about speed limit
3. more than 10 miles above speed limit

7.37 How much of each of the following beverages do you consume?

(Check one each)	None	1 or 2 cups/glasses per day	More than 2 cups/glasses per day	
Milk	1	2	3	(a)
Coffee	1	2	3	(b)
Soft drinks	1	2	3	(c)

7.38 Do you eat breakfast almost every day?

1. Yes
2. No

7.39 Do you eat in between meals?

1. Never
2. Sometimes
3. Often

7.40 On the average, how many hours do you sleep per day?

1. less than 5 hours
2. 6-7 hours
3. 7-8 hours
4. 9-10 hours
5. more than 10 hours

7.41 Has a doctor ever told you that you have trouble with your heart?

1. Yes
2. No

7.42 Have you ever been told that your heart or a part of it is larger than normal?

1. Yes
2. No

7.43 Have you ever had an EKG (heart tracing, ECG, electrocardiogram)?

1. Yes
2. No [If no, go to 7.45]

7.44 What were the findings of the EKG?

1. All traces were normal
2. Some were normal, some not
3. The traces were *not* normal
4. Don't know

7.45 Have you ever been told that you had high blood pressure?

1. Yes
2. No [If no, go to 7.49]

7.46 What was your highest blood pressure? (Please write in the numbers)

Systolic ___ ___ ___ over ___ ___ ___ Diastolic
higher number *lower number*

1. Don't know.

You may be able to find out by calling your doctor's office.

7.47 Have you ever had any treatment for high blood pressure?

1. Yes
2. No [go to 7.49]

7.48 Are you *now* treating your high blood pressure?

1. Yes
2. No

7.49 Do you know what your blood pressure is now? (within the last 3 months)

1. Yes
2. No [go to 7.51]

7.50 What is your blood pressure now? (Please write in the numbers)

Systolic ___ ___ ___ over ___ ___ ___ Diastolic
higher number *lower number*

7.51 Do you know whether your blood pressure is *now*:

1. higher than normal
2. about normal
3. lower than normal
4. don't know

7.52 What is your present blood cholesterol level? (Please write in approximate number)

___ ___ ___ Number

1. Don't know

You may be able to find out by calling your doctor's office.

7.53 If you don't know the exact level, do you know if your cholesterol level is high, about average, or low?

1. higher than average
2. about average
3. lower than average
4. don't know

7.54 What is your *high density lipoprotein* (HDL) level? (write in approximate number)

___ ___ Number

1. Don't know

You may be able to find out by calling your doctor's office.

7.55 If you don't know the exact level, do you know if your high density lipoprotein level is high, about average, or low?

1. higher than average
2. about average
3. lower than average
4. don't know

7.56 Have you ever been told that you have diabetes? (That is, that your blood sugar level is too high)

1. Yes
2. No [go to 7.59]

7.57 Do you:

1. Take insulin shots for diabetes?
2. Take pills for diabetes?
3. Follow a diet for diabetes?
4. Do nothing in particular?

7.58 Did your doctor tell you that your diabetes is controlled?

1. Yes
2. No
3. Don't know

7.59 Has anyone in your family (natural parents or children or brothers or sisters) had diabetes, or does anyone in your family have diabetes now?

1. Yes 2. No 3. Don't know

The following questions relate to your exposure, now or in the past, to substances or processes which may increase your risk. If you have *no* YES responses, proceed to question **7.66**. If you *do have* YES responses be sure to answer the additional questions at the right:

7.60 Have you ever had a job where you were in contact with:

	NO	DON'T KNOW	YES
a) Asbestos	1	2	3
b) Aromatic amines *(eg. chemical dyes)*	1	2	3
c) Benzene	1	2	3
d) Cadmium	1	2	3
e) Coal, pitch, tar, mineral oil	1	2	3
f) Nickel refining	1	2	3
g) Rubber production	1	2	3
h) Uranium	1	2	3
i) Other radioactive substances	1	2	3
j) X-rays	1	2	3
k) Arsenic	1	2	3
l) Vinyl chloride	1	2	3

7.61 If yes, how long altogether have you worked in that job?

	Less than 6 months	6 months to 1 year	2 to 4 years	5 to 10 years	More than 10 years
a)	1	2	3	4	5
b)	1	2	3	4	5
c)	1	2	3	4	5
d)	1	2	3	4	5
e)	1	2	3	4	5
f)	1	2	3	4	5
g)	1	2	3	4	5
h)	1	2	3	4	5
i)	1	2	3	4	5
j)	1	2	3	4	5
k)	1	2	3	4	5
l)	1	2	3	4	5

7.62 Are you still in that job? If not, when did you last work in that job?

	YES	NO	6 months to 1 year	2 to 4 years	5 to 10 years	More than 10 years ago
a)	1	2	3	4	5	6
b)	1	2	3	4	5	6
c)	1	2	3	4	5	6
d)	1	2	3	4	5	6
e)	1	2	3	4	5	6
f)	1	2	3	4	5	6
g)	1	2	3	4	5	6
h)	1	2	3	4	5	6
i)	1	2	3	4	5	6
j)	1	2	3	4	5	6
k)	1	2	3	4	5	6
l)	1	2	3	4	5	6

7.63 Have you ever worked in any of the following occupations, professions, or lines of work?

a) Textile worker	1	2	3
b) Smelter	1	2	3
c) Paint production	1	2	3
d) Shoe production	1	2	3
e) Leather production	1	2	3
f) Farmer	1	2	3
g) Sailor or fisherman	1	2	3
h) Chemist	1	2	3
i) Radiologist	1	2	3
j) Wood fiber production	1	2	3

7.64 If yes, how long altogether did you work in that job?

a)	1	2	3	4	5
b)	1	2	3	4	5
c)	1	2	3	4	5
d)	1	2	3	4	5
e)	1	2	3	4	5
f)	1	2	3	4	5
g)	1	2	3	4	5
h)	1	2	3	4	5
i)	1	2	3	4	5
j)	1	2	3	4	5

7.65 Are you still in that job? If not, when did you last work in that job?

a)	1	2	3	4	5	6
b)	1	2	3	4	5	6
c)	1	2	3	4	5	6
d)	1	2	3	4	5	6
e)	1	2	3	4	5	6
f)	1	2	3	4	5	6
g)	1	2	3	4	5	6
h)	1	2	3	4	5	6
i)	1	2	3	4	5	6
j)	1	2	3	4	5	6

7.66 Have you ever had tuberculosis (TB, consumption)?

1. Yes 2. No

[If no, go to 7.69]

7.67 Did you receive treatment for your tuberculosis?

1. Yes 2. No

7.68 If yes, did you receive multiple fluoroscopic examinations during treatment of your tuberculosis?

1. Yes 2. No 3. Don't know

7.69 Have you ever been told by a doctor that you had bacterial pneumonia (bacterial infection of the lung)?

1. Yes 2. No

7.70 Has a doctor ever told you that you have emphysema?

1. Yes 2. No

7.71 Has anyone in your family (natural parents, brother or sister) ever had emphysema?

1. Yes 2. No

7.72 Has anyone in your family (natural parents, etc.) ever had chronic bronchitis?

1. Yes 2. No

7.73 What is your blood type? (Check one)

1. Type A
2. Type B
3. Type AB
4. Type O
5. Don't know

7.74 Has anyone in your family (natural parents, children, brother or sister) ever had any of the following cancers?

	Yes	*No*	
Stomach	1	2	a
Bowel	1	2	b
Lung	1	2	c
Brain (or nervous system)	1	2	d

7.75 Do you *now* have cancer?

1. Yes 2. No

[If no, go to 7.77]

7.76 What kind of cancer do you have?

1. Throat
2. Esophagus
3. Stomach
4. Pancreas
5. Lung
6. Breast
7. Leukemia
8. Lymphatic
9. Brain, or nervous system
10. Colon, or intestine
11. Rectum
12. Skin
13. Prostate
14. Ovary
15. Uterus
16. Cervix
17. Other

7.77 Have you *ever* had cancer previously?
[1] Yes [2] No
[If no, go to 7.79]

7.78 What kind of cancer did you have?
[1] Throat
[2] Esophagus
[3] Stomach
[4] Pancreas
[5] Lung
[6] Breast
[7] Leukemia
[8] Lymphatic
[9] Brain, or nervous system
[10] Colon, or intestine
[11] Rectum
[12] Skin
[13] Prostate
[14] Ovary
[15] Uterus
[16] Cervix
[17] Other

7.79 Have you ever been told by your doctor that you have polyps or growths in your intestines or rectum? (does not include hemorrhoids or piles)
[1] Yes [2] No

7.80 Has anyone in your family (natural parents or children, brother or sister) ever had such polyps or growths?
[1] Yes [2] No

7.81 Have you had any bleeding from your rectum in the past six months?
[1] Yes [2] No

7.82 If yes, did you tell your doctor about it?
[1] Yes [2] No

7.83 Do you have ulcerative colitis? (ulcerative colitis produces bloody diarrhea with bits of mucus and pus)
[1] Yes [2] No [3] Don't know

7.84 If yes, how long have you had ulcerative colitis?
[1] Less than 10 years
[2] 10-20 years
[3] More than 20 years

7.85 Has your doctor ever told you that you have too little acid in your stomach? (hypochlorhydria)
[1] Yes [2] No

7.86 If yes, do you go for a checkup with x-rays of your stomach every year?
[1] Yes [2] No

7.87 Has a doctor ever told you that you have gastritis? (inflammation of the stomach wall)
[1] Yes [2] No

7.88 If so, do you often suffer from gastritis?
[1] Yes [2] No

7.89 Radiation treatment of the head used to be given for ringworm of the head. Do you think that you received such treatment?
[1] Yes [2] No [3] Don't know

7.90 If yes, how old were you?
[1] 10 years or younger
[2] Older than 10 years

7.91 Radiation treatment of the chest or neck used to be given for enlarged tonsils, enlarged thymus glands and acne. Do you think that you received such treatment?
[1] Yes [2] No [3] Don't know

7.92 If yes, how old were you?
[1] 10 years or younger
[2] Older than 10 years

7.93 Radiation treatment of the back used to be given for inflammation of the joints in the spine. Do you think that you received such treatment?
[1] Yes [2] No [3] Don't know

7.94 Radiation treatment of the thyroid gland used to be given for tumors of the thyroid. It involves injections. Do you think that you received such treatment?
[1] Yes [2] No [3] Don't know

7.95 Radiation treatment of the breast was given for breast infections. Do you think that you received such treatment?
[1] Yes [2] No [3] Don't know

8 Section Eight of the Health deal with reproduction and women's health.

8.00 Have you ever given birth?
[1] Yes [2] No

8.01 How many times have you given birth?
__ __ births

8.02 How old were you when your first child was born?
__ __ years

8.03 Are you pregnant now?
[1] Yes [2] No

8.04 How old were you when you had your first menstrual period?
__ __ years

8.05 Have you reached menopause yet? (stopped menstrual periods)
[1] Yes [2] No [If no, go to 8.07]

8.06 If yes, how old were you when your menstrual periods stopped?
__ __ years

8.07 Do you now take estrogen (female hormone pills)?
[1] Yes [2] No

8.08 If yes, how many years have you been taking estrogens?
__ __ years

8.09 Have you ever taken estrogens?
[1] Yes [2] No

8.10 If yes, for how long did you take estrogens?
__ __ years

8.11 How old were you when you first had sexual intercourse?
__ __ years

8.12 Have you had any of the following organs removed?

	No	Yes	Was organ removed because of cancer? Yes	No	
a) Cervix of the uterus (mouth or neck of womb)	[1]	[2] →	[3]	[4]	a
b) Uterus (womb)	[1]	[2] →	[3]	[4]	b
c) Both ovaries	[1]	[2] →	[3]	[4]	c
d) One ovary	[1]	[2] →	[3]	[4]	d
e) Both breasts	[1]	[2] →	[3]	[4]	e
f) One breast	[1]	[2] →	[3]	[4]	f

8.13 If your ovaries have been removed, how old were you at the time?

__ __ years

8.14 Do you now take birth control pills?

[1] Yes [2] No

8.15 If yes, for how long have you been taking them?

__ __ years __ __ months

8.16 Treatment with DES (diethylstilbestrol) was used to prevent miscarriage in pregnancy. Did your mother receive treatment with DES when she was pregnant with you?

[1] Yes [2] No [3] Don't know

8.17 Have any of the following members of your family ever had *breast cancer*?

	Yes	*No*	
Your mother	[1]	[2]	a
Your mother's sister	[1]	[2]	b
Your sister	[1]	[2]	c
Your daughter	[1]	[2]	d

8.18 Have any of the following members of your family ever had *cancer of the uterus*?

	Yes	*No*	
Your mother	[1]	[2]	a
Your sister	[1]	[2]	b

8.19 Do you have a Pap Smear regularly, at least once a year?

[1] Yes [2] No

8.20 Have you *ever* had a Pap Smear?

[1] Yes [2] No

[If no, go to 8.24]

8.21 How many Pap Smears have you had in the past five years?

__ __ smears

8.22 Was the last Pap Smear normal?

[1] Yes [2] No [3] Don't know

8.23 How many of the Pap Smears were not normal?

[1] Don't know
[2] All smears
__ __ smears

8.24 Do you examine your breasts at least once a month to detect lumps?

[1] Yes [2] No

8.25 Do you have your breasts examined by a physician at least once a year?

[1] Yes [2] No

8.26 Has a doctor ever told you that lumps found in your breasts were benign (harmless) cysts?

[1] Yes [2] No

9

As you know, the usefulness of your Report to you will depend to a great extent on the completeness of your answers to the questions. Some of the questions in your Health Questionnaire may have been difficult to answer or may have been sensitive ones for you. There may be some sections of your Questionnaire where your answers are incomplete or not entirely accurate. Please help us assess how you answered the questions so we can help you take this into account when you interpret your Health Report. You will see the results of this portion of the Questionnaire at the beginning of your Health Report.

9.00 Some of the questions in the Health Appraisal touched on sensitive issues for me.

[1] Yes [2] No [3] Don't know

9.01 I skipped some questions because I didn't want to answer them.

[1] Yes [2] No [3] Don't know

9.02 Occasionally, I fudged my answers to sensitive questions.

[1] Yes [2] No [3] Don't know

9.03 Sometimes I answered a question more in the way I would like things to be than in the way things are.

[1] Yes [2] No [3] Don't know

9.04 Some of the questions were difficult to understand.

[1] Yes [2] No [3] Don't know

9.05 I answered some questions without thinking, just to get the questionnaire finished.

[1] Yes [2] No [3] Don't know

9.06 I was unable to finish the questionnaire because it was too long.

[1] Yes [2] No [3] Don't know

9.07 I didn't answer some questions because of my concern for confidentiality.

[1] Yes [2] No [3] Don't know

If you answered 'yes' to any of the above questions, then go to the next question. If not—then go on to question **9.09**.

9.08 Some of my answers to questions in the following areas may not be fully complete or accurate. *Check all that apply*

[1] Age
[2] Race
[3] Income
[4] Health Attitudes
[5] Mental Health
[6] Cancer Risks
[7] Family Health History
[8] Smoking
[9] Weight
[10] Exercise
[11] Blood Pressure
[12] Cholesterol
[13] Alcohol

9.09 I would like to know more about the procedures used to safeguard the confidentiality of my data. *Check here to get more information in your Report.*

[1] Yes [2] No

9.10 I anticipate my Health Report will contain a lot of bad news about my health.

[1] Yes [2] No [3] Don't know

9.11 I think that the information *requested* in this questionnaire allows for the Health Report to correctly estimate my health risks.

[1] Yes [2] No [3] Don't know

9.12 I think that the information I *provided* in response to the questions allows for my Health Report to correctly estimate my health risks.

[1] Yes [2] No [3] Don't know

9.13 I expect my Health Report to tell me things regarding my health which I didn't know before.

[1] Yes [2] No [3] Don't know

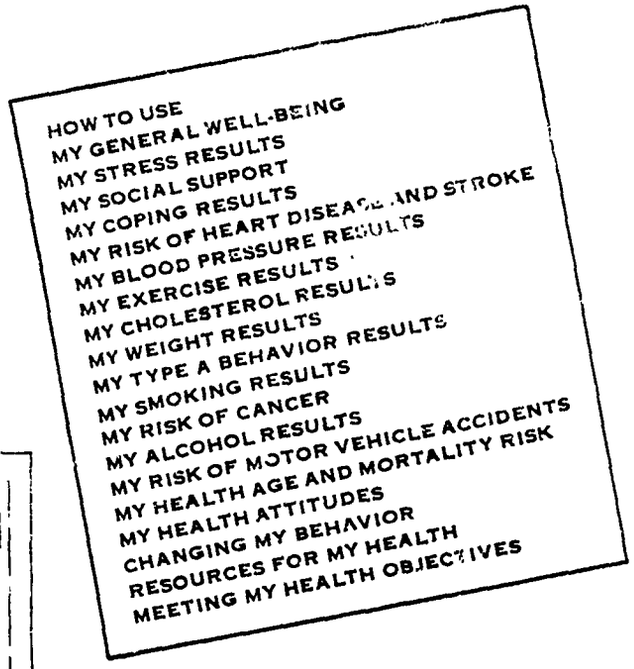
9.14 The Health Questionnaire did not touch on things which I think increase my health risks.

[1] Yes [2] No [3] Don't know

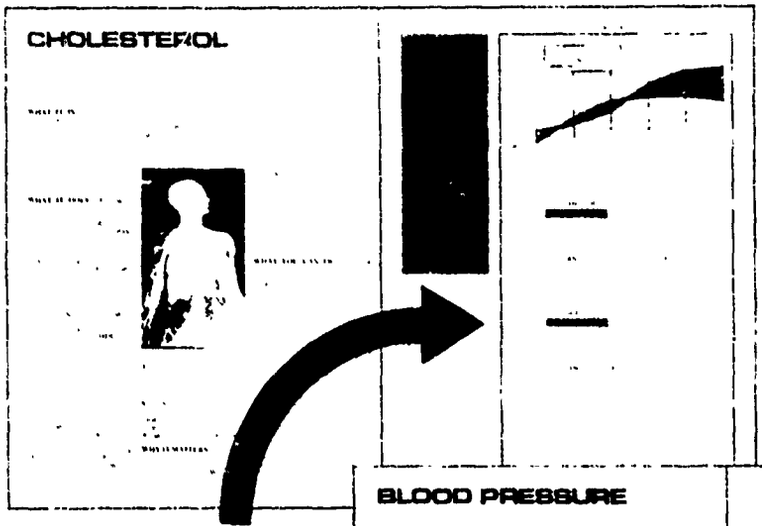
If you answered yes, please list:

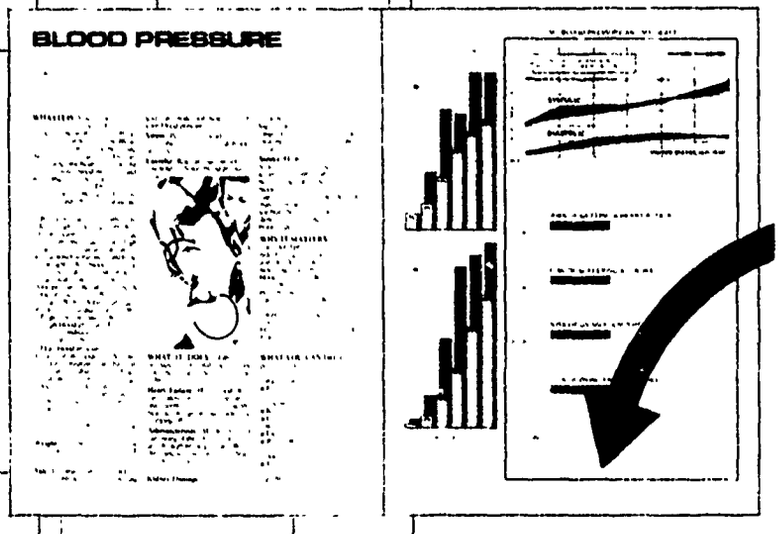
If you have any additional comments on the Questionnaire, please list them below or on a separate sheet.

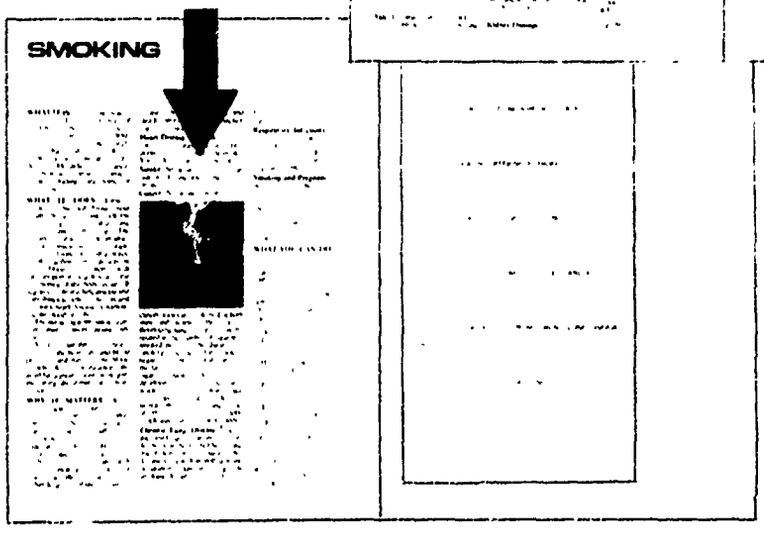
WHAT WILL BE IN YOUR HEALTH REPORT...



Your Health Report will be a 48 page magazine-sized book in full color. Each section of your Health Report will give you an analysis of *your* results *in each of the major areas listed above*, together with the necessary information to evaluate your results.







- Your results will be printed by computer, giving you easily understood answers drawn from complex masses of data. Your results will be compared to national norms and you will get clear options for action.

- In every section of your Health Report, you'll receive the best and most current information about each major area of health and behavior: what it is, what it does, why it matters to you, and what you can do about it.

- Your unique code is part of the procedure which assures you that the information in your Report will be held in confidence and cannot be identified with you or obtained by anyone else without your written approval.

CORONARY RISK SCREENING APPRAISAL ELEMENTS

1.5 Mile Run Test (O_2 Uptake ml/kg/min

Preferred Standard	> 42
Mean	44.4
Standard Deviation	7.5
Minimum Level	18
Maximum Level	59
Valid Observations	103

- The age-adjusted preferred standard of greater than 42 ml/kg/min equates to approximately an 8 minute mile pace.
- Only 103 of the 197 participants volunteered for the run.
- Oxygen uptake ranged from 18-59 ml with the majority (70%) exhibiting excellent aerobic capacity.
- Thirty-one participants did not meet the standard.

HDL Cholesterol mg%

Preferred Standard	> 50
Mean	48.4
Standard Deviation	10.2
Minimum Level	21.0
Maximum Level	91.0
Valid Observations	197

- The preferred standard for levels greater than 50 mg% was set for this group to reflect the importance of high density lipoproteins, and the need to optimize factors that result in elevated levels.
- Thirty-three percent (65) met or exceeded this standard.
- The remainder (132) ranged from 21 to 49 mg% and were below recommended levels.

Incl 6

LDL Cholesterol mg%

Preferred Standard	< 135
Mean	158.8
Standard Deviation	39.3
Minimum Level	51.0
Maximum Level	283.0
Valid Observations	197

- The preferred standard of levels less than 135 mg% LDL was met by 28% (56) of the group.
- 141 participants had LDL levels from 136-283 mg%.

Ratio of Total Cholesterol to HDL

Preferred Standard	< 4.5:1
Mean	4.4:1
Standard Deviation	1.181
Minimum Level	0.979:1
Maximum Level	9.2:1
Valid Observations	197

- Fifty-five percent (108) of the group met the preferred standard, while 70 percent (138) reflected acceptable ratios below 5:1.
- There were 32 participants whose ratio of total cholesterol to HDL exceeded 5:1. These individuals were given programs of diet and exercise and scheduled for re-evaluation.

Triglycerides mg%

Preferred Standard	< 100
Mean	111.3
Standard Deviation	59.3
Minimum Level	40.0
Maximum Level	410.0
Valid Observations	197

- The preferred standard of less than 100 mg% was met by 59% (117) of the group.
- 80 participants had levels above 100; 13 had levels greater than 200 mg% and required follow-up visits.

Fasting Glucose mg%

Preferred Standard	< 95
Mean	89.5
Standard Deviation	9.4
Minimum Level	68.0
Maximum Level	121.0
Valid Observations	197

- 73% (144) met the preferred standard.
- Three participants had fasting blood sugar greater than 115 that required further evaluation.

Smoking Habits

Value Labels: None or less than 1 year (0); less than one year or pipe-cigar (1); 1-10 daily (2); 11-30 daily (3); 30-40 daily (5); more than 40 daily (6)

Mean	0.655
Standard Deviation	1.251
Minimum Level	0
Maximum Level	6.0
Valid Observations	197

Findings:

None or less than one year	69.5%	(137)
Less than one year or pipe-cigar	14.7	(29)
1-10 Daily	4.1	(8)
11-30 Daily	8.1	(16)
30-40 Daily	3.0	(6)
More than 40 daily	0.5	(1)

Blood Pressure - Systolic (mm Hg)

Preferred Standard	< 120
Mean	120.3
Standard Deviation	11.1
Minimum Level	98.0
Maximum Level	180.0
Valid Observations	197

- Sixty-three percent (124) of the group met the preferred standard of less than 120 mm Hg.
- There were 8 previously undiagnosed hypertensives that required further evaluation and follow-up.

Blood Pressure - Diastolic (mm Hg)

Preferred Standard	< 80
Mean	76.5
Standard Deviation	8.8
Minimum Level	50.0
Maximum Level	120.0
Valid Observations	197

- Eighty-two percent (161) of the group met the preferred standard of less than 80 mm Hg diastolic blood pressure.

Resting Electrocardiogram (ECG)

Value Labels: Normal (0); Equivocal (1); Abnormal (3)

Mean	0.122
Standard Deviation	0.4111
Minimum Level	0
Maximum Level	3.00
Valid Observations	197

Findings:

- Normal	89.8%
- Equivocal	9.1%
- Abnormal	1.0%

- Two participants had abnormal ECGs and were referred for further evaluation.

Personal History of Heart Attack

Value Labels: None (0); over 5 years ago (2); 2 to 5 years ago (3); 1-<2 years ago (5); 0-<1 year ago (8)

Mean	0.015
Standard Deviation	0.214
Minimum Level	0
Maximum Level	3.0
Valid Observations	197

Findings:

None	99.5%
2-5 years	.5%

- One individual had a previous history of heart attack.

Family History of Heart Attack

Value Labels: None (0); Yes, over 50 years (2); Yes, 50 years or under (4)

Mean	0.680
Standard Deviation	1.247
Minimum Level	0
Maximum Level	4.0
Valid Observations	197

Findings

None	73.6%	(145)
Yes, over 50 years	19.3%	(38)
Yes, 50 years or under	7.1%	(14)

Known Heart Disease Without Heart Attack or Bypass

Value Labels: None (0); Known heart disease (6)

Mean	0.442
Standard Deviation	1.556
Minimum Level	0
Maximum Level	6
Valid Observations	197

Findings

None	92.9%	(182)
Known Heart Disease	7.1%	(15)

Percent Body Fat

Preferred Standard	< 19 %
Mean	22.4
Standard Deviation	6.1
Minimum Level	6.0
Maximum Level	36.2
Valid Observations	197

- The majority of the group met the preferred standard of body fat with 28.9% (57) reflecting body fat levels less than the preferred standard.
- There were 15 participants exceeding 30% scheduled for further evaluation after programs of diet and exercise.
- 140 participants had body fat in excess of 19%.

Tension - Anxiety

Value Labels: None or slight (0); Moderate (1); High (2); Very Tense (3)

Mean	0.853
Standard Deviation	0.710
Minimum Level	0
Maximum Level	3.0
Valid Observations	197

Findings:

None or slight	31.5%	(62)
Moderate	53.8	(106)
High	12.7	(25)
Very Tense	2.0	(4)

Diabetes

Value Labels: None (0); Has Diabetes (3)

Mean	0.015
Standard Deviation	0.214
Minimum Level	0
Maximum Level	3.0
Valid Observations	197

Findings:

None	99.5%	(196)
Has Diabetes	.5	(1)

Age Factor

Value Labels: Under 30 (0); 30-39 (1); 40-49 (2); 50-59 (3)

Mean	1.934
Standard Deviation	0.441
Minimum Level	0
Maximum Level	3.0
Valid Observations	197

Findings:

Under 30	1 %	(2)
30-39	10.2	(20)
40-49	83.2	(164)
50-59	5.6	(11)

Aerobic Points (average weekly accumulation)

Preferred	> 50
Mean	62.9
Standard Deviation	72.5
Minimum Level	0
Maximum Level	450.0
Valid Observations	189

- Aerobic points were calculated by physician interviews/ value judgments.
- The preferred standard for this group was set to reflect the importance of aerobic activity for military personnel, and the need for individuals to exceed minimum standards of exercise. Fifty-one percent of the class had predicted activity levels that met or exceeded the preferred standard, while 45 percent were predicted as showing less than 30 aerobic points per week.

Total Coronary Risk

Value Labels: Very Low (1); Low (2); Moderate (3); High (4); Very High (5)

Mean	2.234
Standard Deviation	0.712
Minimum Level	0
Maximum Level	5.0
Valid Observations	197

Findings:

Very Low	9.6%	(19)
Low	60.4	(119)
Moderate	26.4	(52)
High	3.0	(6)
Very High	.5	(1)

- 70 Percent of the group did not exceed a greater than 10 percent risk for development of coronary heart disease within the next 5 years.
- 30 percent, or 59 individuals, had a combination of risk factors suggesting the probability of a 40 percent or greater chance of coronary problems over the next 5 years.

SUBJECT: Coronary Risk Screening Questionnaire

TO: AWC Students

1. The AWC Coronary Risk Screening Project is nearing completion. I need your reaction, comments and recommendations ASAP (whether or not you participated) for inclusion in the final report.

2. The purposes of the Study were to increase individual awareness of potential risk factors, promote wholesome health habits and attitudes, and to determine if this program is worthwhile to offer future AWC classes and potential application throughout the Army.

3. Non Participants -
Please use the General Comments section to let me know why you didn't - or were unable to participate (time, special medical program, not interested, etc.).

4. Participants -
Please check the items that pertain to your experience and include any comments you feel applicable.

The Coronary Risk Assessment

96 % - enabled me to understand more about primary coronary health hazards.

74.3 - provided me a means of establishing an audit trail on my cardiovascular health.

71.8 - reinforced my good health habits.

100 - should be continued for future AWC classes.

76.8 - should be incorporated with the Well Women's Program into Family Practice procedures.

69.2 - should be considered for adoption throughout the Army for all career soldiers.

84.3 - should consider stress tests for soldiers over 40.

75.2 - should replace height-weight criteria in the Army Weight Control Program with standards of percent body fat.

45(v) - should be voluntary -- mandatory. (pls check one)
55(m)

(Incl 1)

The Coronary Risk Assessment (cont'd)

67.7 % - motivated me to attain or maintain an ideal weight/ percent body fat.

49.3 - motivated me to change my health habits.

46.8 - motivated me to increase my level of activity.

65.2 - motivated me to modify my diet.

97.5 - should start at the beginning of the school year and include expert guest speakers on:

- 81.7 % - fitness
- 80 - diet and nutrition
- 90 - stress
- 68.3 - promotion and programs for those desiring to quit smoking, eg. Smoke Enders.

67.5 % - should be incorporated into the AWC curriculum with instruction on:

- 60.0 % - fitness
- 56.7 - health hazards, attitudes and habits
- 50.8 - physiology
- 57.5 - diet and nutrition
- 63.3 - stress (active and passive coping)
- 60 - activity program alternatives

5. GENERAL COMMENTS: Bottom line: Was the program worthwhile and should it be continued? Your comments could have an impact on program acceptance and continuation. Your ideas may help to refine the program and make it more beneficial and attractive for future use.

Please return the completed questionnaire and comments to me ASAP. Many thanks for your help.

Don Williamson

Don Williamson
Box 194

SPSS FOR HONEYWELL SERIES 6000 AND SERIES 60 LEVEL 66 - GCOS SYSTEMS

RELEASE 7.2A-1

CONVERTED FROM SPSS INCORPORATED'S IBM/OS SPSSH PACKAGE BY THE
INSTITUTE FOR SOCIAL AND ENVIRONMENTAL STUDIES, UNIVERSITY OF KANSAS

DEFAULT SPACE ALLOCATION.. ALLOWS FOR.. 2 TRANSFORMATIONS
WORKSPACE 448 WORDS 8 RECODE VALUES + LAG VARIABLES
TRANSPACE 89 WORDS 16 IF/COMPUTE OPERATIONS

```
RUN NAME        CORONARY RISK APPRAISAL
FILE NAME       AWC-JW/TEST
VARIABLE LIST   SEX,STATUS,INTF,
                MLOXY,HDL,LDL,TRIG,GLUC,BF,
                SYSTBP,DIASBP,PERHIST,FAMHIST,HEADIS,
                SMOKHB,TENS,DIAB,AGE,ECG,CORRSK,AP
INPUT MEDIUM    DISK,REWIND,BLANK=-1
INPUT FORMAT    FIXED(5X,3F1.0,9X,F2.0,4F3.0,F4.1,2F3.0,4X,9F1.0,F3.0)
```

ACCORDING TO YOUR INPUT FORMAT, VARIABLES ARE TO BE READ AS FOLLOWS-

VARIABLE	TYPE	RECORD	COLUMNS
SEX	F	1	6- 6
STATUS	F	1	7- 7
INTF	F	1	8- 8
MLOXY	F	1	18- 19
HDL	F	1	20- 22
LDL	F	1	23- 25
TRIG	F	1	26- 28
GLUC	F	1	29- 31
BF	F	1	32- 35
SYSTBP	F	1	36- 38
DIASBP	F	1	39- 41
PERHIST	F	1	46- 46
FAMHIST	F	1	47- 47
HEADIS	F	1	48- 48
SMOKHB	F	1	49- 49
TENS	F	1	50- 50
DIAB	F	1	51- 51
AGE	F	1	52- 52
ECG	F	1	53- 53
CORRSK	F	1	54- 54
AP	F	1	55- 57

```
COMPUTE         RATIO = (HDL + LDL) / HDL
RECODE          HDL (LOWEST THRU 49=1)(50 THRU 999=2) /
                LDL (LOWEST THRU 135=1) (136 THRU 999=2) /
```

```
                    TRIG (LOWEST THRU 100=1) (101 THRU 999=2)  /
                    GLUC (LOWEST THRU 95=1) (96 THRU 999=2) /
                    BF (LOWEST THRU 19=1) (19.001 THRU 999=2) /
                    SYSTBP (LOWEST THRU 120=1) (121 THRU 999=2) /
                    DIASBP (LOWEST THRU 80=1) (81 THRU 999=2) /
                    AP (LOWEST THRU 30=1) (31 THRU 999=2)

****  1K WORDS OF TRANSPACE ADDED. INCREASE LIMITS FOR NEXT RUN ****

          IF        (RATIO GT 0 AND RATIO LE 4.5) RATIO = 1
          IF        (RATIO GT 4.5 AND RATIO LE 999) RATIO = 2
          VAR LABELS SEX SEX /
                    STATUS STATUS /
                    INTF INTERNATIONAL FELLOW /
                    MLOXY MILLILITERS OR OXYGEN PER KG OF BODY WT /
                    HDL CHOLESTEROL - HDL /
                    LDL CHOLEPTEROL - LDL /
                    TRIG TRIGLYCERIDES /
                    GLUC GLUCOSE /
                    BF % OF BODY FAT /
                    SYSTBP BLOOD PRESSURE - SYSTOLIC /
                    DIASBP BLOOD PRESSURE - DIASTOLIC /
                    PERHIST PERSONAL HISTORY OF HEART ATTACK /
                    FAMHIST FAMILY HISTORY OF HEART ATTACK /
                    HEADIS KNOWN HEART DISEASE W-O HEART ATTACK OR BYPASS /
                    SMOKHB SMOKING HABITS /
                    TENS TENSION - ANXIETY /
                    DIAB DIABETES /
                    AGE AGE FACTOR /
                    ECG ELECTRO CARDIOGRAM  /
                    CORRSK TOTAL CORONARY RISK /
                    AP AEROBIC POINTS
          VALUE LABELS SEX (1) MALE (2) FEMALE /
                    STATUS (1) STUDENT (2) STAFF & FACULTY /
                    INTF (1)  NO, INTF (2) YES, INTF /
                    HDL (1) BELOW 50 (2) 50 AND ABOVE /
                    LDL (1) UP TO 135 (2) ABOVE 135 /
                    TRIG (1) UP TO 100 (2) ABOVE 100 /
                    GLUC (1) UP TO 95 (2) ABOVE 95 /
                    BF (1) UP TO 19 % (2) ABOVE 19% /
                    SYSTBP (1) UP TO 120 (2) ABOVE 120 /
                    DIASBP (1) UP TO 80 (2) ABOVE 80 /
                    PERHIST (0) NONE (2) OVER 5 YEARS AGO (3) 2-5 YEARS AGO
                    (5) 1-<2 YEARS AGO (8) 0-<1 YEAR AGO /
                    FAMHIST (0) NONE (2) YES,OVER 50 YEARS
                    (4) YES,50 YRS OR UNDER /
                    HEADIS (0) NONE (5) KNOWN HEART DISEASE /
                    SMOKHB (0) NONE OR > 1 YEAR (1) < 1 YR OR PIPE-CIGAR
                    (2) 1-10 DAILY
                    (3) 11-30 DAILY (5) 30-40 DAILY (6) MORE THAN 40 DAILY /
                    TENS (0) NO OR SLIGHT TENSION (1) MODERATE TENSION
                    (2) HIGH TENSION (3) VERY TENSE /
                    DIAB (0) NONE (3) HAS DIABETES /
                    AGE (0) UNDER 30 (1) 30-39 YEARS OLD (2) 40-49 YEARS OLD
```

```
                                (3) 50-59 YEARS OLD (4) 60+ YEARS OLD /
                                ECG (0) NORMAL (1) EQUIVOCAL (3) ABNORMAL /
                                CORRSK (1) VERY LOW (2) LOW (3) MODERATE (4) HIGH (5) VERY HIGH/
                                AP (1) UP TO 30 (2) ABOVE 30
                  VAR LABELS    RATIO RATIO OF TOTAL CHOLESTEROL TO HDL
                  VALUE LABELS  RATIO (1) RATIO OF 0 THRU 4.5 (2) RATIO OF ABOVE 4.5
                  MISSING VALUES  SEX TO AP (-1)
                  FREQUENCIES   GENERAL=ALL
*****   3452 WORDS OF WORKSPACE ARE AVAILABLE TO THIS PROCEDURE *****
                  OPTIONS       6,8
                  STATISTICS    1,3,4,5,9,10,11

GIVEN WORKSPACE ALLOWS FOR   1154 TOTAL VALUES AND    230 LABELED VALUES PER VARIABLE FOR 'FREQUENCIES'
                  READ INPUT DATA

AFTER READING    197 CASES FROM SUBFILE AWC     .  END OF FILE WAS ENCOUNTERED ON LOGICAL UNIT # 8
```

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

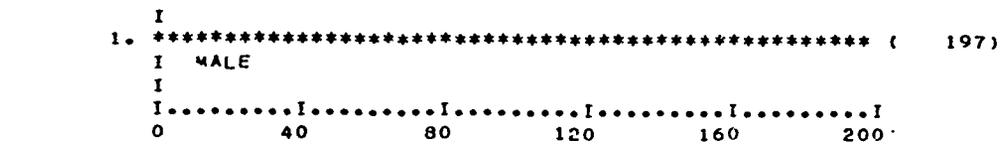
SEX SEX

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
MALE	1.	197	100.0	100.0	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

SEX SEX

CODE



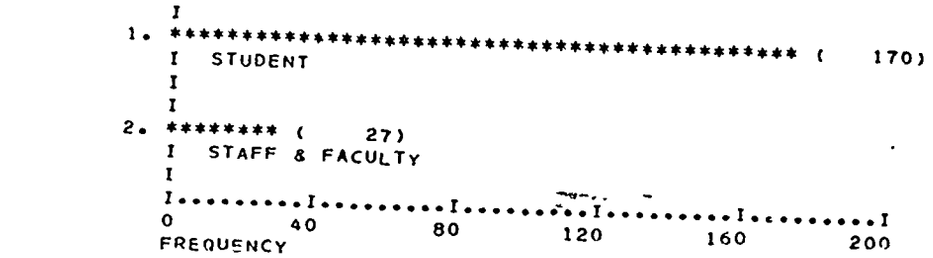
MEAN	1.000	MEDIAN	1.000	MODE	1.000
STD DEV	0.	RANGE	0.	MINIMUM	1.000
MAXIMUM	1.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

STATUS STATUS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
STUDENT	1.	170	86.3	86.3	86.3
STAFF & FACULTY	2.	27	13.7	13.7	100.0
	TOTAL	197	100.0	100.0	



MEAN	1.137	MEDIAN	1.079	MODE	1.000
STD DEV	0.345	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

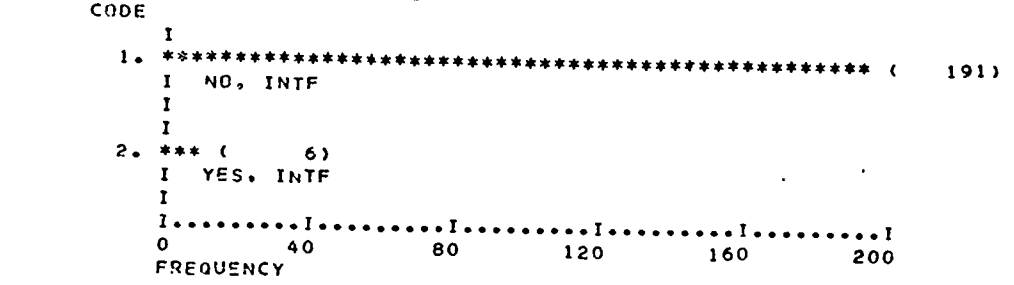
INTF INTERNATIONAL FELLOW

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NO. INTF	1.	191	97.0	97.0	97.0
YES. INTF	2.	6	3.0	3.0	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

INTF INTERNATIONAL FELLOW

CODE



MEAN	1.030	MEDIAN	1.016	MODE	1.000
STD DEV	0.172	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

MLOXY MILLILITERS OR OXYGEN PER KG OF BODY WT

CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT	CODE	FREQ	ADJ PCT	CUM PCT
18.	1	1	1	39.	2	2	21	48.	6	6	69
20.	2	2	3	40.	5	5	26	49.	7	7	76
27.	1	1	4	41.	4	4	30	50.	2	2	78
29.	1	1	5	42.	4	4	34	51.	10	10	87
31.	1	1	6	43.	4	4	38	52.	1	1	88
35.	2	2	8	44.	8	8	46	53.	6	6	94
36.	2	2	10	45.	2	2	48	54.	3	3	97
37.	7	7	17	46.	10	10	57	56.	2	2	99
38.	3	3	19	47.	6	6	63	59.	1	1	100

M I S S I N G D A T A

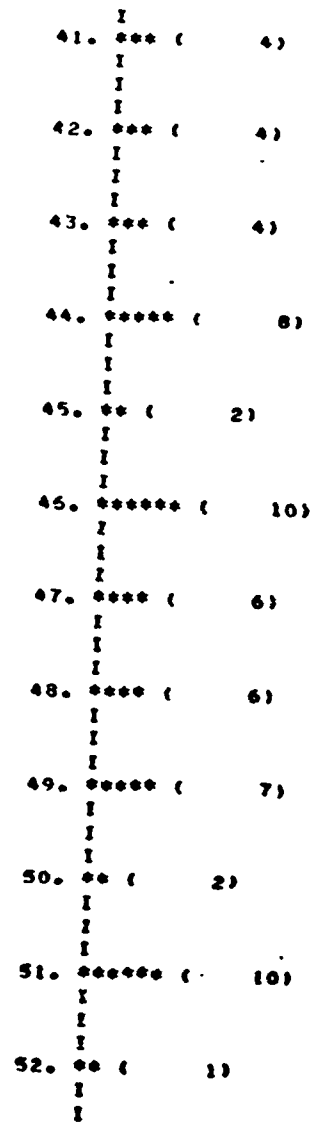
CODE	FREQ	CODE	FREQ	CODE	FREQ
-1.	94				

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

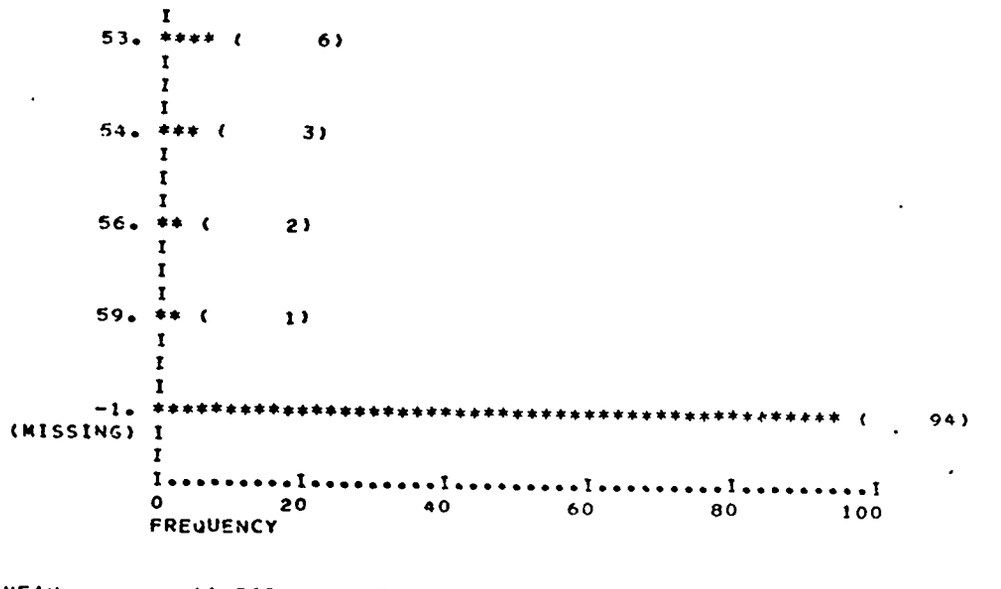
MLOXY MILLILITERS OR OXYGEN PER KG OF BODY WT

CODE

```
      I
 18. ** (      1)
      I
      I
      I
 20. ** (      2)
      I
      I
      I
 27. ** (      1)
      I
      I
      I
 29. ** (      1)
      I
      I
      I
 31. ** (      1)
      I
      I
      I
 35. ** (      2)
      I
      I
      I
 36. ** (      2)
      I
      I
      I
 37. ***** (      7)
      I
      I
      I
 38. *** (      3)
      I
      I
      I
 39. ** (      2)
      I
      I
      I
 40. **** (      5)
      I
      I
```


41. *** (4)
42. *** (4)
43. *** (4)
44. ***** (8)
45. ** (2)
46. ****** (10)
47. **** (6)
48. **** (6)
49. ***** (7)
50. ** (2)
51. ****** (10)
52. ** (1)

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST



MEAN	44.369	MEDIAN	45.750	MODE	46.000
STD DEV	7.486	RANGE	41.000	MINIMUM	18.000
MAXIMUM	59.000				

VALID CASES 103 MISSING CASES 94

CORONARY RISK APPRAISAL

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

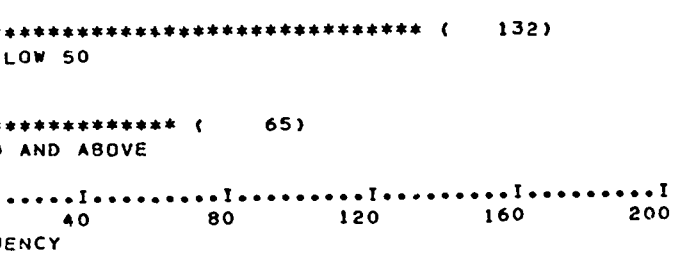
HDL CHOLESTEROL - HDL

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
BELOW 50	1.	132	67.0	67.0	67.0
50 AND ABOVE	2.	65	33.0	33.0	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

HDL CHOLESTEROL - HDL

CODE



MEAN	1.330	MEDIAN	1.246	MODE	1.000
STD DEV	0.471	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

LDL CHOLESTEROL - LDL

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UP TO 135	1.	56	28.4	28.4	28.4
ABOVE 135	2.	141	71.6	71.6	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

LDL CHOLESTEROL - LDL

CODE

1. ********** (56)
I UP TO 135
I
I
2. ********** ********** ********** (141)
I ABOVE 135
I
I.....I.....I.....I.....I.....I
0 40 80 120 160 200
FREQUENCY

MEAN	1.716	MEDIAN	1.801	MODE	2.000
STD DEV	0.452	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

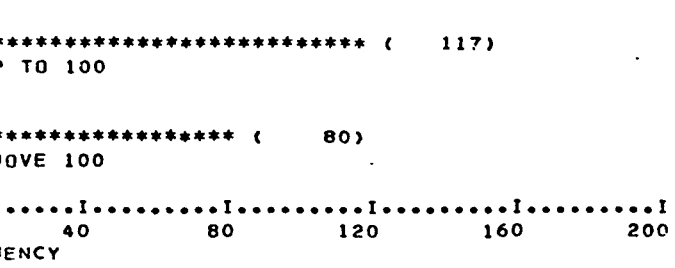
FILE AWC (CREATION DATE = 05/15/80) ~JW/TEST

TRIG TRIGLYCERIDES

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UP TO 100	1.	117	59.4	59.4	59.4
ABOVE 100	2.	80	40.6	40.6	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

TRIG TRIGLYCERIDES
CODE



MEAN	1.406	MEDIAN	1.342	MODE	1.000
STD DEV	0.492	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

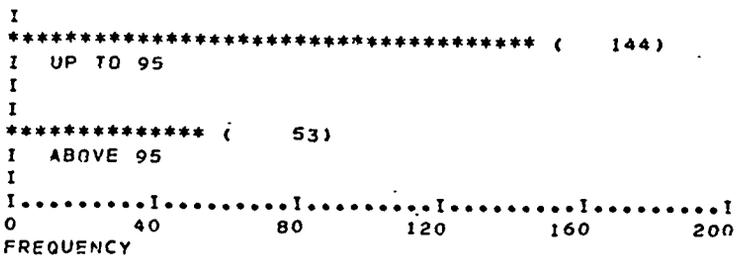
GLUC GLUCOSE

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UP TO 95	1.	144	73.1	73.1	73.1
ABOVE 95	2.	53	26.9	26.9	100.0
	TOTAL	197	100.0	100.0	

FILE A*C (CREATION DATE = 05/15/80) -JW/TEST

GLUC GLUCOSE

CODE



MEAN	1.269	MEDIAN	1.184	MODE	1.000
STD DEV	0.445	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

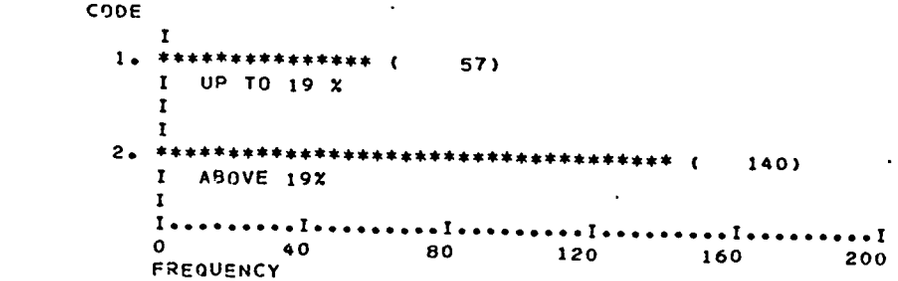
BF % OF BODY FAT

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UP TO 19 %	1.	57	28.9	28.9	28.9
ABOVE 19%	2.	140	71.1	71.1	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

BF % OF BODY FAT

CODE



MEAN	1.711	MEDIAN	1.796	MODE	2.000
STD DEV	0.455	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

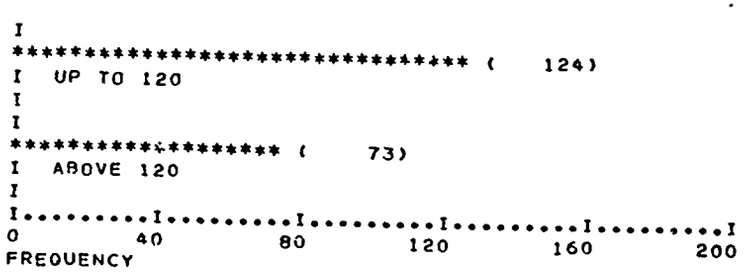
SYSTBP BLOOD PRESSURE - SYSTOLIC

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UP TO 120	1.	124	62.9	62.9	62.9
ABOVE 120	2.	73	37.1	37.1	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

SYSTBP BLOOD PRESSURE - SYSTOLIC

CODE



MEAN	1.371	MEDIAN	1.294	MODE	1.000
STD DEV	0.484	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

DIASBP BLOOD PRESSURE - DIASTOLIC

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UP TO 80	1.	161	81.7	81.7	81.7
ABOVE 80	2.	36	18.3	18.3	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

-IASBP BLOOD PRESSURE - DIASTOLIC

CODE

```
      I
   1. ****************************************** (   161)
      I  UP TO 80
      I
      I
   2. ********** (    36)
      I  ABOVE 80
      I
      I.........I.........I.........I.........I.........I
      0         40        80        120       160       200
      FREQUENCY
```

MEAN	1.183	MEDIAN	1.112	MODE	1.000
STD DEV	0.387	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

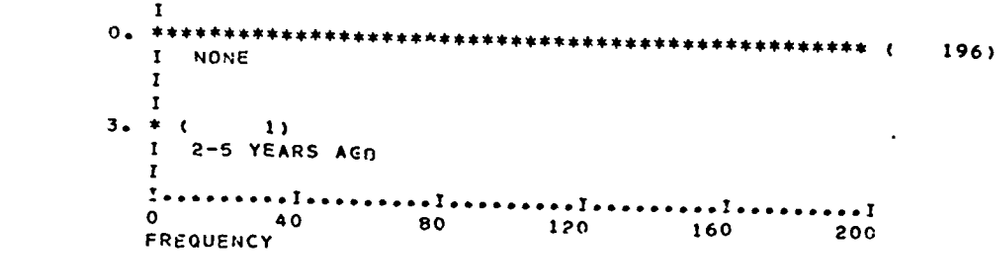
VALID CASES 197 MISSING CASES 0

PERHIST PERSONAL HISTORY OF HEART ATTACK

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NONE	0.	196	99.5	99.5	99.5
2-5 YEARS AGO	3.	1	0.5	0.5	100.0
	TOTAL	197	100.0	100.0	

FILE A*C (CREATION DATE = 05/15/80) -JW/TEST

PERHIST PERSONAL HISTORY OF HEART ATTACK
CODE



MEAN	0.015	MEDIAN	0.008	MODE	0.
STD DEV	0.214	RANGE	.00	MINIMUM	0.
MAXIMUM	3.000				

VALID CASES 197 MISSING CASES 0

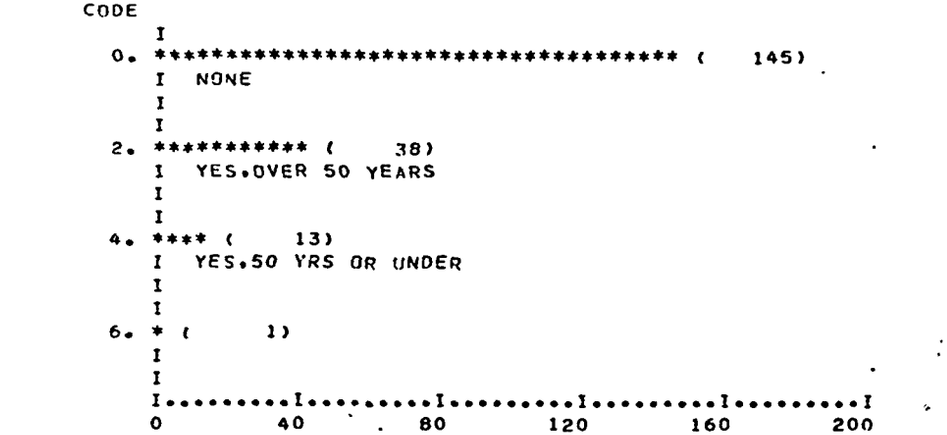
FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

FAMHIST FAMILY HISTORY OF HEART ATTACK

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NONE	0.	145	73.6	73.6	73.6
YES.OVER 50 YEARS	2.	38	19.3	19.3	92.9
YES.50 YRS OR UNDER	4.	13	6.6	6.6	99.5
	6.	1	0.5	0.5	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

FAMHIST FAMILY HISTORY OF HEART ATTACK



MEAN	0.680	MEDIAN	0.359	MODE	0.
STD DEV	1.247	RANGE	6.000	MINIMUM	0.
MAXIMUM	6.000				

VALID CASES 197 MISSING CASES 0

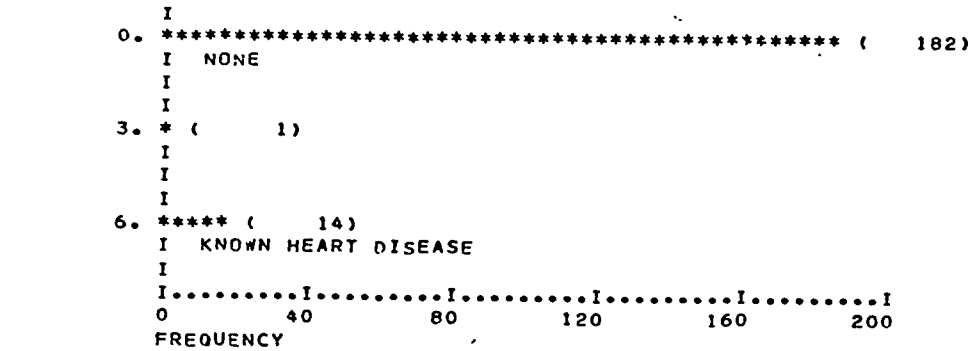
FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

HEADIS KNOWN HEART DISEASE W-O HEART ATTACK OR

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NONE	0.	182	92.4	92.4	92.4
	3.	1	0.5	0.5	92.9
KNOWN HEART DISEASE	6.	14	7.1	7.1	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

HEADIS KNOWN HEART DISEASE W-O HEART ATTACK OR
CODE



MEAN	0.442	MEDIAN	0.124	MODE	0.
STD DEV	1.556	RANGE	6.000	MINIMUM	0.
MAXIMUM	6.000				

VALID CASES 197 MISSING CASES 0

FILE A*C (CREATION DATE = 05/15/80) -JK/TEST

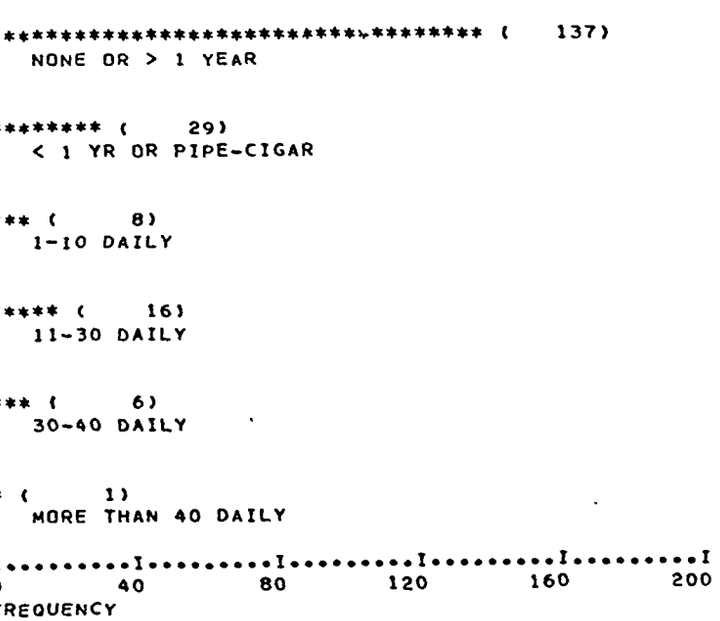
SMOKHB SMOKING HABITS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NONE OR > 1 YEAR	0.	137	69.5	69.5	69.5
< 1 YR OR PIPE-CIGAR	1.	29	14.7	14.7	84.3
1-10 DAILY	2.	8	4.1	4.1	88.3
11-30 DAILY	3.	16	8.1	8.1	96.4
30-40 DAILY	5.	6	3.0	3.0	99.5
MORE THAN 40 DAILY	6.	1	0.5	0.5	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

SMOKHB SMOKING HABITS

CODE



MEAN	0.655	MEDIAN	0.219	MODE	0.
STD DEV	1.251	RANGE	6.000	MINIMUM	0.
MAXIMUM	6.000				

VALID CASES 197 MISSING CASES 0

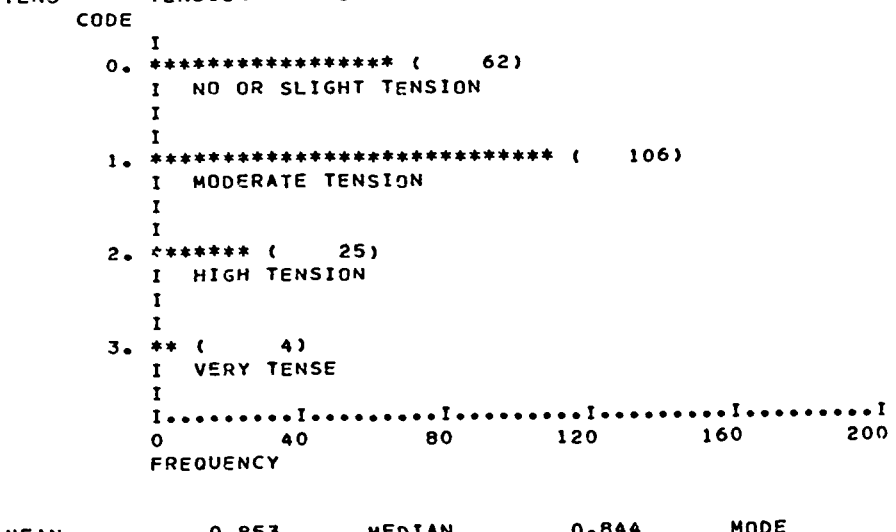
FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

TENS TENSION - ANXIETY

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NO OR SLIGHT TENSION	0.	62	31.5	31.5	31.5
MODERATE TENSION	1.	106	53.8	53.8	85.3
HIGH TENSION	2.	25	12.7	12.7	98.0
VERY TENSE	3.	4	2.0	2.0	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

TENS TENSION - ANXIETY



MEAN	0.853	MEDIAN	0.844	MODE	1.000
STD DEV	0.710	RANGE	3.000	MINIMUM	0.
MAXIMUM	3.000				

VALID CASES 197 MISSING CASES 0

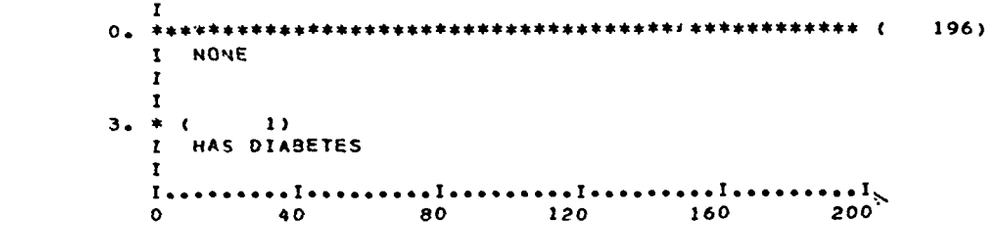
FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

DIAB DIABETES

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NONE	0.	196	99.5	99.5	99.5
HAS DIABETES	3.	1	0.5	0.5	100.0
	TOTAL	197	100.0	100.0	

FILE A&C (CREATION DATE = 05/15/80) -JW/TEST

DIAB DIABETES
CODE



MEAN	0.015	MEDIAN	0.008	MODE	0.
STD DEV	0.214	RANGE	3.000	MINIMUM	0.
MAXIMUM	3.000				

VALID CASES 197 MISSING CASES 0

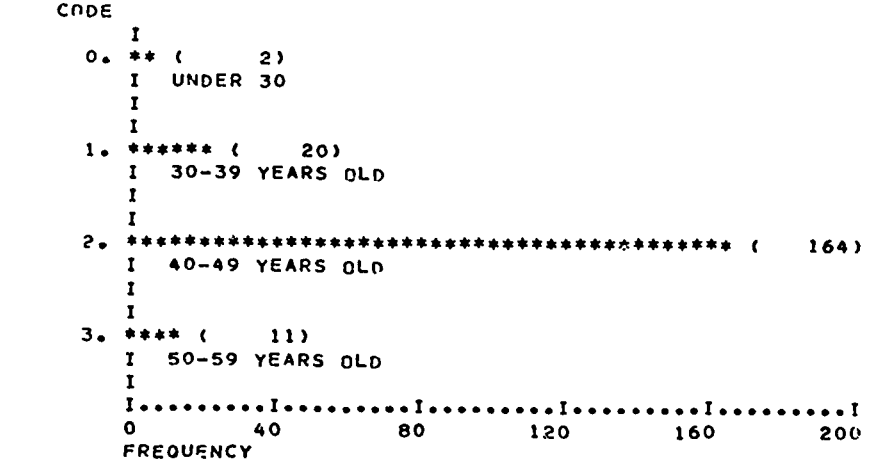
FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

AGE AGE FACTOR

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UNDER 30	0.	2	1.0	1.0	1.0
30-39 YEARS OLD	1.	20	10.2	10.2	11.2
40-49 YEARS OLD	2.	164	83.2	83.2	94.4
50-59 YEARS OLD	3.	11	5.6	5.6	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

AGE AGE FACTOR
CODE



MEAN	1.934	MEDIAN	1.966	MODE	2.000
STD DEV	0.441	RANGE	3.000	MINIMUM	0.
MAXIMUM	3.000				

VALID CASES 197 MISSING CASES 0

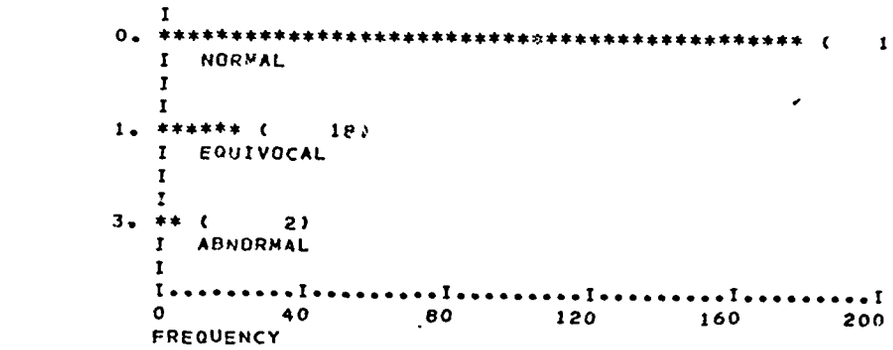
FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

ECG ELECTRO CARDIOGRAM

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
NORMAL	0.	177	89.8	89.8	89.8
EQUIVOCAL	1.	18	9.1	9.1	99.0
ABNORMAL	3.	2	1.0	1.0	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

ECG ELECTRO CARDIOGRAM
CODE



MEAN	0.122	MEDIAN	0.056	MODE	0.
STD DEV	0.411	RANGE	3.000	MINIMUM	0.
MAXIMUM	3.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

CORRSK TOTAL CORONARY RISK

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
	0.	2	1.0	1.0	1.0
VERY LOW	1.	17	8.6	8.6	9.6
LOW	2.	119	60.4	60.4	70.1
MODERATE	3.	52	26.4	26.4	96.4
HIGH	4.	6	3.0	3.0	99.5
VERY HIGH	5.	1	0.5	0.5	100.0
	TOTAL	197	100.0	100.0	

CORONARY RISK APPRAISAL

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST-

COPRSK TOTAL CORONARY RISK

CODE

```
        I
  0.  ** (      2)
        I
        I
        I
  1.  ***** (     17)
        I  VERY LOW
        I
        I
  2.  ********************************** (    119)
        I  LOW
        I
        I
  3.  ************** (     52)
        I  MODERATE
        I
        I
  4.  *** (      6)
        I  HIGH
        I
        I
  5.  * (      1)
        I  VERY HIGH
        I
        I.........I.........I.........I.........I.........I
        0         40        80        120       160       200
        FREQUENCY
```

MEAN	2.234	MEDIAN	2.168	MODE	2.000
STD DEV	0.712	RANGE	5.000	MINIMUM	0.
MAXIMUM	5.000				

VALID CASES 197 MISSING CASES 0

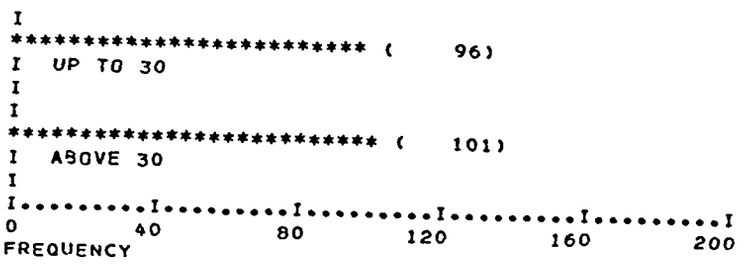
AP AEROBIC POINTS

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
UP TO 30	1.	96	48.7	48.7	48.7
ABOVE 30	2.	101	51.3	51.3	100.0
	TOTAL	197	100.0	100.0	

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

AP AEROBIC POINTS

CODE



MEAN	1.513	MEDIAN	1.525	MODE	2.000
STD DEV	0.501	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

FILE AWC (CREATION DATE = 05/15/80) -JW/TEST

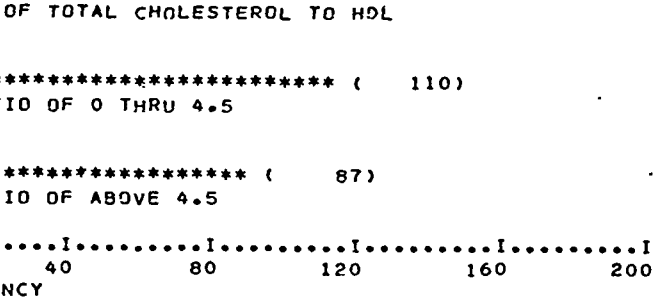
RATIO RATIO OF TOTAL CHOLESTEROL TO HDL

CATEGORY LABEL	CODE	ABSOLUTE FREQ	RELATIVE FREQ (PCT)	ADJUSTED FREQ (PCT)	CUM FREQ (PCT)
RATIO OF 0 THRU 4.5	1.	110	55.8	55.8	55.8
RATIO OF ABOVE 4.5	2.	87	44.2	44.2	100.0
	TOTAL	197	100.0	100.0	

FILE. AWC (CREATION DATE = 05/15/80) -JW/TEST

RATIO RATIO OF TOTAL CHOLESTEROL TO HDL

CODE



MEAN	1.442	MEDIAN	1.395	MODE	1.000
STD DEV	0.498	RANGE	1.000	MINIMUM	1.000
MAXIMUM	2.000				

VALID CASES 197 MISSING CASES 0

SPSS FOR HONEYWELL SERIES 6000 AND SERIES 60 LEVEL 66 - GCOS SYSTEMS

RELEASE 7.2A-1

CONVERTED FROM SPSS INCORPORATED'S IBM/OS SPSSH PACKAGE BY THE
INSTITUTE FOR SOCIAL AND ENVIRONMENTAL STUDIES, UNIVERSITY OF KANSAS

DEFAULT SPACE ALLOCATION.. ALLOWS FOR.. 2 TRANSFORMATIONS
WORKSPACE 448 WORDS 8 RECODE VALUES + LAG VARIABLES
TRANSPACE 89 WORDS 16 IF/COMPUTE OPERATIONS

```
RUN NAME        CORONARY RISK APPRAISAL
FILE NAME       AWC-JW/TEST
VARIABLE LIST   SEX,STATUS,INTF,
                MLOXY,HDL,LDL,TRIG,GLUC,BF,
                SYSTBP,DIASBP,PERHIST,FAMHIST,HEADIS,
                SMOKHB,TENS,DIAB,AGE,ECG,CORRSK,AP
INPUT MEDIUM    DISK,REWIND,BLANK=-1
INPUT FORMAT    FIXED(5X,3F1.0,9X,F2.0,4F3.0,F4.1,2F3.0,4X,9F1.0,F3.0)
```

ACCORDING TO YOUR INPUT FORMAT, VARIABLES ARE TO BE READ AS FOLLOWS-

VARIABLE	TYPE	RECORD	COLUMNS
SEX	F	1	6- 6
STATUS	F	1	7- 7
INTF	F	1	8- 8
MLOXY	F	1	18- 19
HDL	F	1	20- 22
LDL	F	1	23- 25
TRIG	F	1	26- 28
GLUC	F	1	29- 31
BF	F	1	32- 35
SYSTBP	F	1	36- 38
DIASBP	F	1	39- 41
PERHIST	F	1	46- 46
FAMHIST	F	1	47- 47
HEADIS	F	1	48- 48
SMOKHB	F	1	49- 49
TENS	F	1	50- 50
DIAB	F	1	51- 51
AGE	F	1	52- 52
ECG	F	1	53- 53
CORRSK	F	1	54- 54
AP	F	1	55- 57

```
VAR LABELS      SEX SEX /
                STATUS STATUS /
                INTF INTERNATIONAL FELLOW /
```

```
                                MLOXY MILLILITERS OR OXYGEN PER KG OF BODY WT /
                                HDL CHOLESTEROL - HDL /
                                LDL CHOLERTEROL - LDL /
                                TRIG TRIGLYCERIDES /
                                GLUC GLUCOSE /
                                BF % OF BODY FAT /
                                SYSTBP BLOOD PRESSURE - SYSTOLIC /
                                DIASBP BLOOD PRESSURE - DIASTOLIC /
                                PERHIST PERSONAL HISTORY OF HEART ATTACK /
                                FAMHIST FAMILY HISTORY OF HEART ATTACK /
                                HEADIS KNOWN HEART DISEASE W-O HEART ATTACK OR BYPASS /
                                SMOKHB SMOKING HABITS /
                                TENS TENSION - ANXIETY /
                                DIAB DIABETES /
                                AGE AGE FACTOR /
                                ECG ELECTRO CARDIOGRAM /
                                CORRSK TOTAL CORONARY RISK /
                                AP AEROBIC POINTS
                    VALUE LABELS SEX (1) MALE (2) FEMALE /
                                STATUS (1) STUDENT (2) STAFF & FACULTY /
                                INTF (1) NO, INTF (2) YES, INTF /
                                PERHIST (0) NONE (2) OVER 5 YEARS AGO (3) 2-5 YEARS AGO
                                (5) 1-<2 YEARS AGO (8) 0-<1 YEAR AGO /
                                FAMHIST (0) NONE (2) YES,OVER 50 YEARS
                                (4) YES,50 YRS OR UNDER /
                                HEADIS (0) NONE (6) KNOWN HEART DISEASE /
                                SMOKHB (0) NONE OR > 1 YEAR (1) < 1 YR OF PIPE-CIGAR
                                (2) 1-10 DAILY
                                (3) 11-30 DAILY (5) 30-40 DAILY (6) MORE THAN 40 DAILY /
                                TENS (0) NO OR SLIGHT TENSION (1) MODERATE TENSION
                                (2) HIGH TENSION (3) VERY TENSE /
                                DIAB (0) NONE (3) HAS DIABETES /
                                AGE (0) UNDER 30 (1) 30-39 YEARS OLD (2) 40-49 YEARS OLD
                                (3) 50-59 YEARS OLD (4) 60+ YEARS OLD /
                                ECG (0) NORMAL (1) EQUIVOCAL (3) ABNORMAL /
                                CORRSK (1) VERY LOW (2) LOW (3) MODERATE (4) HIGH (5) VERY HIGH
                    COMPUTE     RATIO = (HDL + LDL) / HDL
                    VAR LABELS  RATIO RATIO OF TOTAL CHOLESTEROL TO HDL
                    MISSING VALUES SEX TO AP (-1)
                    CONDESCRIPTIVE ALL
*****   5878 WORDS OF WORKSPACE ARE AVAILABLE TO THIS PROCEDURE *****

 ***** GIVEN SPACE ALLOWS FOR 452 VARIABLES FOR CONDESCRPTIVE *****


                    STATISTICS  1,3,4,5,9,10,11
                    READ INPUT DATA

AFTER READING   197 CASES FROM SUBFILE AWC    . END OF FILE WAS ENCOUNTERED ON LOGICAL UNIT # 8
```

FILE A&C (CREATION DATE = 05/15/80) -JW/TEST

VARIABLE SEX SEX

MEAN	1.000	STD DEV	0.	RANGE	0.
MINIMUM	1.000	MAXIMUM	1.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE STATUS STATUS

MEAN	1.137	STD DEV	0.345	RANGE	1.000
MINIMUM	1.000	MAXIMUM	2.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE INTF INTERNATIONAL FELLOW

MEAN	1.030	STD DEV	0.172	RANGE	1.000
MINIMUM	1.000	MAXIMUM	2.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE MLOXY MILLILITERS OR OXYGEN PER KG OF BODY WT

MEAN	44.369	STD DEV	7.486	RANGE	41.000
MINIMUM	18.000	MAXIMUM	59.000		

VALID OBSERVATIONS - 103 MISSING OBSERVATIONS - 94

VARIABLE HDL CHOLESTEROL - HDL

MEAN	48.330	STD DEV	10.201	RANGE	70.000
MINIMUM	21.000	MAXIMUM	91.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE LDL CHOLERTEROL - LDL

MEAN	158.760	STD DEV	39.312	RANGE	232.000
MINIMUM	51.000	MAXIMUM	283.000		

VALID OBSERVATIONS - 196 MISSING OBSERVATIONS - 1

FILE AVC (CREATION DATE = 05/15/80) -JW/TEST

VARIABLE TRIG TRIGLYCERIDES

MEAN	111.254	STD DEV	59.265	RANGE	370.000
MINIMUM	40.000	MAXIMUM	410.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE GLUC GLUCOSE

MEAN	89.472	STD DEV	9.418	RANGE	53.000
MINIMUM	68.000	MAXIMUM	121.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE BF % OF BODY FAT

MEAN	22.441	STD DEV	6.062	RANGE	30.200
MINIMUM	6.000	MAXIMUM	36.200		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE SYSTBP BLOOD PRESSURE - SYSTOLIC

MEAN	120.259	STD DEV	11.062	RANGE	82.000
MINIMUM	98.000	MAXIMUM	180.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE DIASBP BLOOD PRESSURE - DIASTOLIC

MEAN	76.497	STD DEV	8.756	RANGE	70.000
MINIMUM	50.000	MAXIMUM	120.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE PERHIST PERSONAL HISTORY OF HEART ATTACK

MEAN	0.015	STD DEV	0.214	RANGE	3.000
MINIMUM	0.	MAXIMUM	3.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE FAMHIST FAMILY HISTORY OF HEART ATTACK

MEAN	0.680	STD DEV	1.247	RANGE	6.000
MINIMUM	0.	MAXIMUM	6.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE HEADIS KNOWN HEART DISEASE W-O HEART ATTACK OR

MEAN	0.442	STD DEV	1.556	RANGE	6.000
MINIMUM	0.	MAXIMUM	6.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE SMOKHB SMOKING HABITS

MEAN	0.655	STD DEV	1.251	RANGE	6.000
MINIMUM	0.	MAXIMUM	6.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE TENS TENSION - ANXIETY

MEAN	0.853	STD DEV	0.710	RANGE	3.000
MINIMUM	0.	MAXIMUM	3.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE DIAB DIABETES

MEAN	0.015	STD DEV	0.214	RANGE	3.000
MINIMUM	0.	MAXIMUM	3.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE AGE AGE FACTOR

MEAN	1.934	STD DEV	0.441	RANGE	3.000
MINIMUM	0.	MAXIMUM	3.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE ECG ELECTRO CARDIOGRAM

MEAN	0.122	STD DEV	0.411	RANGE	3.000
MINIMUM	0.	MAXIMUM	3.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE CORRSK TOTAL CORONARY RISK

MEAN	2.234	STD DEV	0.712	RANGE	5.000
MINIMUM	0.	MAXIMUM	5.000		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

VARIABLE AP AEROBIC POINTS

MEAN	62.926	STD DEV	72.482	RANGE	450.000
MINIMUM	0.	MAXIMUM	450.000		

VALID OBSERVATIONS - 189 MISSING OBSERVATIONS - 8

VARIABLE RATIO RATIO OR TOTAL CHOLESTEROL TO HDL

MEAN	4.423	STD DEV	1.181	RANGE	8.172
MINIMUM	0.979	MAXIMUM	9.152		

VALID OBSERVATIONS - 197 MISSING OBSERVATIONS - 0

SUBJECT: Coronary Risk Screening Questionnaire

TO: AWC Students

1. The AWC Coronary Risk Screening Project is nearing completion. I need your reaction, comments and recommendations ASAP (whether or not you participated) for inclusion in the final report.

2. The purposes of the Study were to increase individual awareness of potential risk factors, promote wholesome health habits and attitudes, and to determine if this program is worthwhile to offer future AWC classes and potential application throughout the Army.

3. Non Participants -
Please use the General Comments section to let me know why you didn't - or were unable to participate (time, special medical program, not interested, etc.).

4. Participants -
Please check the items that pertain to your experience and include any comments you feel applicable.

The Coronary Risk Assessment

96 % - enabled me to understand more about primary coronary health hazards.

74.3 - provided me a means of establishing an audit trail on my cardiovascular health.

71.8 - reinforced my good health habits.

100 - should be continued for future AWC classes.

76.8 - should be incorporated with the Well Women's Program into Family Practice procedures.

69.2 - should be considered for adoption throughout the Army for all career soldiers.

84.3 - should consider stress tests for soldiers over 40.

75.2 - should replace height-weight criteria in the Army Weight Control Program with standards of percent body fat.

45(v) - should be voluntary -- mandatory. (pls check one)
55(m)

The Coronary Risk Assessment (cont'd)

67.7 % - motivated me to attain or maintain an ideal weight/ percent body fat.

49.3 - motivated me to change my health habits.

46.8 - motivated me to increase my level of activity.

65.2 - motivated me to modify my diet.

97.5 - should start at the beginning of the school year and include expert guest speakers on:

- 81.7 % - fitness
- 80 - diet and nutrition
- 90 - stress
- 68.3 - promotion and programs for those desiring to quit smoking, eg. Smoke Enders.

67.5 % - should be incorporated into the AWC curriculum with instruction on:

- 60.0 % - fitness
- 56.7 - health hazards, attitudes and habits
- 50.8 - physiology
- 57.5 - diet and nutrition
- 63.3 - stress (active and passive coping)
- 60 - activity program alternatives

5. GENERAL COMMENTS: Bottom line: Was the program worthwhile and should it be continued? Your comments could have an impact on program acceptance and continuation. Your ideas may help to refine the program and make it more beneficial and attractive for future use.

Please return the completed questionnaire and comments to me ASAP. Many thanks for your help.

Don Williamson

Don Williamson
Box 194

CORONARY RISK ASSESSMENT STUDY

(Student Comments)

First feedback I have ever received on a physical; most enlightening.

Excellent program - initiate at C&GSC, ADV Crs, and SGM Academy.

Definitely continue; most worthwhile fitness activity I have ever seen.

Absolutely necessary. Body fat measurement more meaningful than arbitrary matrices of AR 600-9.

Should be cross-fed to other services for possible DOD adoption.

Program was highly enlightening and worthwhile.

Outstanding program. I feel very fortunate to have had the opportunity to participate.

Health of the Officer Corps should be a top priority program.

Percent body fat is more meaningful than height-weight criteria and should be adopted as an Army standard.

Provided me an unique opportunity to confirm my fitness and attain an ideal body weight.

First time in my life I felt as though I had the individual attention of a physician, and that he was genuinely concerned with discussing my health.

Clearly a super benefit - very informative.

Should be adopted for servicemen over 40. I would like to forward a copy of your report to the Canadian Forces Medical System for consideration for use in the Canadian Forces.

Allowed me to tie together for the first time the impact of diet, cholesterol levels, body composition into overall fitness.

Very worthwhile. Answered many questions. Reinforced positive health habits.

Extremely helpful. Helped me to realize my weight problem. I eventually lost 25 pounds during the period.

Program was invaluable. Best overall approach to providing feedback on the state of my health.

Super program. One of the more valuable activities I have experienced at the AWC.

Outstanding program. Made me determined not to start smoking again.

One of the finest programs at the AWC. Could contribute significantly to keeping talent, expensively trained officers on active duty for years longer.

Good program. Very informative regardless of education and background.

Very worthwhile - wish the wives would have been included - lack of a stress test was a big disappointment.

Excellent program. Needs to be up front and stressed throughout the year.

Definitely worth the effort - best cardiovascular physical - should be mandatory.

Provides an analytical, preventive and corrective approach which is badly needed to replace the current official medical policy of "fix it when it breaks".

I hope the college and the Army will adopt these programs and lead us out of the "darkness".

Probably the single most beneficial endeavor/benefit of my year at the AWC.

Absolutely super! The more we can educate the leadership, the more our troops will be influenced toward better fitness.

Should be mandatory for all military. One of the best fitness programs I have attended.

Program very worthwhile - appreciated the doctor's time and helpful attitude.

I personally find this program an extremely useful initiative.

Meaningful feedback is the best part of the program.

Cost impact could be high, but clearly this investment has a high payback.

Definitely worthwhile and should be continued thrcughout DOD. It's a matter of life and death and could definitely contribute to a more productive life.

Value immeasurable; long overdue at the AWC.

Most intelligent approach to preventive medicine I have ever seen -- professional, factual, understandable and persuasive.

Strongly urge continuation; proven of value to all who participated.

Highlights the crucial ingredients to good discipline in this area of professional/personal development.

Outstanding program! Best medical feedback I've ever had. The Army needs a program like this Army-wide.

Clearly worthwhile. Program failed in a major way by not having a stress test . . . considered essential.

American College of Sports Medicine

PREVENTIVE/REHABILITATIVE EXERCISE TEST TECHNOLOGIST WORKSHOPS & CERTIFICATION SESSIONS

SITE	1980 WORKSHOP DATES	FEE	1980 CERTIFICATION DATES	FEE
Oral Roberts U., Tulsa, OK	May 12-21	$350.00	May 22 & 23	$50.00
Connecticut University & St. Francis Hospital, Hartford, CT	June 2-11	$400.00	June 12 & 13	$50.00
Wake Forest University, Winston-Salem, NC	June 16-25	$350.00	June 26 & 27	$50.00
University of California, Davis, CA	July 7-16	$350.00	July 17 & 18	$50.00
Colorado State University Fort Collins, CO	July 7-16	$350.00	July 17 & 18	$50.00
Aerobic Center Dallas, TX	July 14-23	$350.00	July 24 & 25	$50.00

GENERAL INFORMATION

DESCRIPTION-PURPOSE

Preventive/Rehabilitative Exercise Test Technologist Workshops

The purpose of the workshop will be to provide the student with the opportunity to study in great depth various theories, concepts, procedures, and techniques of the cardiological exercise technologist. Knowledge and the necessary skills in Graded Exercise Testing (GXT) of both suspected and diagnosed Coronary Artery Disease patients will be the primary emphasis throughout the workshop. A secondary area of emphasis will be the basic understandings regarding the establishment and operation of intervention and rehabilitation cardiac exercise programs. Attending the workshop does not require one to attend the ACSM Certification session that follows each workshop.

American College of Sports Medicine (ACSM) Exercise Test Technologist Certification Sessions

Certification of Exercise Test Technologists by the American College of Sports Medicine is an attempt to provide a standard for those who desire to become competent and skilled in the many aspects of graded exercise testing, with implications to physiological responses of the human body within an exercise environment. The ACSM Exercise Test Technologist Certification process involves two days of practical and cognitive examination. Upon evaluation the successful candidate becomes a certified ACSM Exercise Test Technologist. The unsuccessful candidate is specifically informed of the area where they are weak and in which an attempt should be made to upgrade understandings and skills. The unsuccessful candidate may then be reexamined in their own geographical area, at minimal additional expense. American National Red Cross or American Heart Association Certification (or the Canadian equivalent) is required to complete the ACSM Exercise Test Technologist Certification Process. It is not necessary to attend a prior Preventive/Rehabilitative Exercise Technologist Workshop to attend an ACSM Exercise Test Technologist Certification Session.

CREDIT

The workshops and certification sessions may be taken for undergraduate or graduate credits. However, the obtained credit is not offered through the institution offering the workshops and certification sessions, but must be obtained by the participant through the participant's college or university.

PARTICIPANT EVALUATION

Exercise Test Technologist Workshop

The evaluation of the participant in the workshop is a subjective self analysis of competencies and understandings regarding the various aspects of the workshop. The evaluation is structured via self-help materials, sample practicum case presentation, and sample cognitive understandings.

ACSM Exercise Test Technologist Certification Sessions

Objective testing is the basis of the ACSM certification process. Each candidate will be evaluated via the following:

1. GXT Practicum (Practical and Oral)—an individually administered one to two hour examination on the practical skills involved in graded exercise testing.
2. Cardiovascular Exercise Physiology (Written)—2 hour multiple choice examination.
3. Electrocardiography—2 hour multiple choice examination.

Each participant will receive a descriptive and statistical analysis of the examination results.

LABORATORY FACILITIES

The laboratory facilities of the participating institutions represents the finest exercise physiology, clinical graded exercise testing, and human performance laboratories within North America. The same facilities will be utilized for the workshops and the certification sessions. The specific equipment to be utilized will be independent graded exercise testing stations consisting of an exercise mode (bicycle ergometer or treadmill), ECG recorder and companion oscilloscope, (bipolar or multi-lead systems; 1, 2, 3 channel recorders), and related accessory equipment (blood pressure, etc.) The ratio of GXT stations per participating students will be four to one per station (i.e., 40 students, 10 stations).

LECTURE FACILITIES

The lecture facilities will involve both auditorium lecture halls, and traditional classroom laboratory facilities. All lecture facilities are air-conditioned with the most modern equipment regarding chairs, writing surface, slide projector capacity, audio-microphone capabilities, and related audio-visual equipment.

EXERCISE FACILITIES

Each of the participating institutions contain the finest of indoor and outdoor exercise facilities. Swimming pools, indoor and outdoor running areas, game areas, and companion locker and shower facilities will be available to participants.

ROOM AND BOARD

Room and board arrangements will vary based upon the site one attends. Some locations may offer contract meal plans while others will leave the meals to the discretion of the participant to be purchased at near-by restaurants. Specific information regarding room and board arrangements will be provided to the participant upon registration.

TEXTBOOKS

Listed prices are approximate and subject to change.

Preventive/Rehabilitative Exercise Test Technologist Workshops

Required: *Guidelines for Graded Exercise Testing and Exercise Prescription*, American College of Sports Medicine, Lea & Febiger, Philadelphia, 1975. ($4.00)

Practical Electrocardiography, Henry J. Marriott. 6th Edition, Williams & Wilkins Co., 428 E. Preston St. Baltimore, Md. 21202, 1977. ($15.50)

Adult Fitness and Cardiac Rehabilitation, Edited by Philip K. Wilson, Ed.D., University Park Press, Baltimore, Maryland, 1st Edition, 1975. ($24.50)

Coronary Heart Disease, Exercise Testing and Rehabilitation Therapy. Edited by Samuel M. Fox, M.D., International Medical Corporation, Denver, 1974; Slides, Tapes and Text. ($40.00)

Exercise in Cardiovascular Health & Disease, Edited by E.A. Amsterdam, J.H. Wilmore, & A.N. DeMario, York Medical Books, New York, New York, 1977. ($35.00)

Health & Fitness Through Physical Activity. Edited by Michael L. Pollock, Jack H. Wilmore, Samuel M. Fox III, John Wiley & Sons, Somerset, New Jersey, 1978. ($11.95)

Exercise Testing and Exercise Training in Coronary Heart Disease, edited by John Naughton/Herman Hellerstein, Academic Press, New York, New York, 1973. ($22.00)

Policies and Procedures of a Cardiac Rehabilitation Program, Immediate to Long Term Care, authored by Philip K. Wilson, Ed.D., Edward R. Winga, M.D., Joseph W. Edgett, M.D., Thomas Gushiken, Ph.D., Lea & Febiger, Philadelphia, 1st Edition, 1977. ($10.00)

ACSM Certification Sessions

Required: *Guidelines for Graded Exercise Testing and Exercise Prescription*, American College of Sports Medicine. Lea & Febiger, Philadelphia, 1975. ($14.00)

PREREQUISITES

Preventive/Rehabilitative Exercise Test Technologist Workshops

A basic understanding and related skills of the following:

1. Normal resting electrocardiogram
2. Graded exercise testing modes (bicycle ergometer, treadmill)
3. Cardiovascular exercise physiology
4. Anatomy of the heart
5. Risk factors and coronary disease
6. Parameters of blood pressure and heart rate
7. Pulmonary exercise physiology

Also required:

A current American Heart Association or American National Red Cross CPR Certification, or the Canadian equivalent.

A current physical exam including an interpreted 12 lead ECG prior to attending a workshop.

Exercise Test Technologist American College of Sports Medicine Certification Sessions

American Heart Association or American National Red Cross basic CPR Certification or the Canadian equivalent.

No additional specific prerequisites are required—however, a basic understanding of the Preventive/Rehabilitative Exercise Technologist Workshop prerequisites is **highly recommended** as well as an understanding of the workshop course offering.

There are no absolute prerequisites for the workshop with the exception of current CPR certification. However, participants should understand that the workshop is not intended to provide the full experience and knowledge necessary for ACSM certification as stated in the behavioral objectives for the Exercise Test Technologist. A basic knowledge of exercise physiology, electrocardiography, and graded exercise test administration is therefore highly recommended. Thus, the workshop serves to review and supplement the background experience of the well-prepared participant.

Tear off and mail to: AMERICAN COLLEGE OF SPORTS MEDICINE
1440 Monroe Street, Madison, Wisconsin 53706

Please Send Me An Application Form For: (Check √)

Preventive/Rehabilitative Exercise Test Technologist Workshops and/or Certification

Oral Roberts University _____
Connecticut U. & St. Francis Hospital _____
Wake Forest University _____
University of California-Davis _____
Colorado State University _____
Aerobic Center _____

Send Information To:
(Please Print)

Name _____
(Last) (First)

Address _____
(Street) (Institution, if appropriate)

_____
(City) (State) (Zip)

PREVENTIVE/REHABILITATIVE EXERCISE TEST TECHNOLOGIST WORKSHOPS

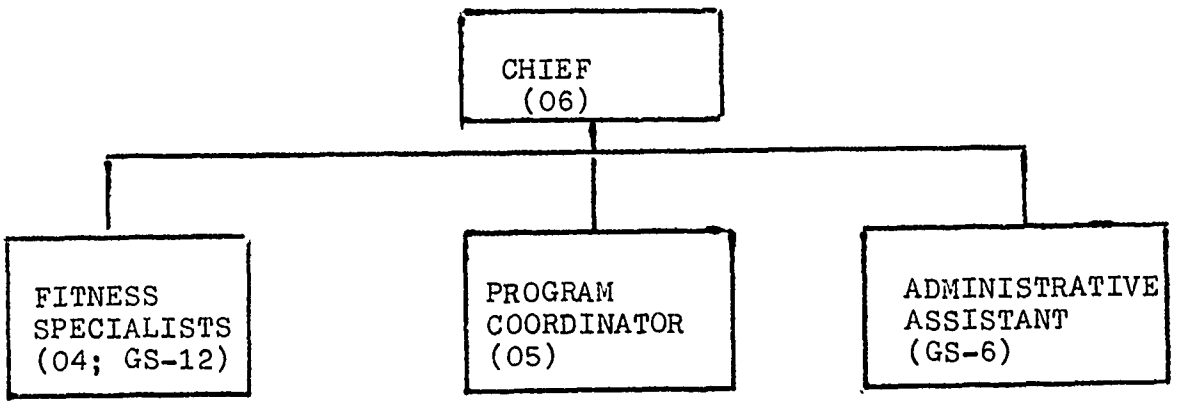
COURSE OFFERINGS

(Exact offerings will vary depending upon the site selected)

Pathophysiology of Coronary Heart Disease
Overview of Cardiac Rehabilitation
Patient Selection for Graded Exercise Testing and Cardiac Rehabilitation
Physiological Implications of Graded Exercise Testing (GXT)
Testing Modes for GXT
Introduction to Electrocardiography
The Multiple Intervention Approach to Rehabilitation
Basics of Graded Exercise Testing
Exercise Physiology
Dietary Intervention in CAD
Electrocardiography
Coronary Angiography
Basics of Post MI Rehabilitation
Data Processing in the GXT
Specificity of the GXT
Systolic Time Intervals
Nuclear Radiology and GXT
Vocational Assessment of the Cardiac Patient
Vocational Considerations in Rehabilitation
Administrative Considerations in a Rehabilitation Program
Psycho-social Assessment and Intervention of the Cardiac Patient
Emergency Procedures
Contacting the Medical Community
Orientation Procedures for the Cardiac Patient
Record Keeping and Maintenance of Files
Pulmonary Physiology
Principles of Training
Finances and Insurance
Patient Education
Demonstration—GXT and Blood Pressure
Exercise Session—Participation with Cardiac Patients

DA FITNESS INTEGRATION TEAM

(FIT)



- The Team Chief should have a background in physical education and battalion command level troop experience.

- The Program Coordinator should have a background in physical education or recreation and at least company command level troop experience.

- The Fitness Specialists' position(s) should be filled with a sports medicine physician or fitness specialists certified by the American College of Sports Medicine.

Incl 9